AN EXPLORATION OF THE LEARNING EXPERIENCES OF VISUALLY IMPAIRED PHYSIOTHERAPY STUDENTS IN HIGHER EDUCATION IN THE UK

by

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ABSTRACT

This research presents the learning experiences of seven visually impaired physiotherapy students in Higher Education in the UK, using case study methodology to identify the perceived factors that create *barriers* and *enable* participation in learning to become a physiotherapist for these participants.

Semi-structured interviews about university and practice based learning using the language of the ICF identified perceived environmental barriers and enablers such as support, relationships, attitudes, resources and technology that influenced activity and participation in both university and practice based learning. Individual factors and personal and professional values also influenced both aspects of learning.

The findings from university learning were shared with academic physiotherapy staff across the UK confirming awareness of the factors that created barriers and enablers in learning. Despite the existence of barriers, and a clear shared and necessary desire by academic and practice educators to work collaboratively to enable inclusive learning in physiotherapy, there was a sense of inconsistency with professional values in the overall approach to education for these participants.

Building on the ICF, and using Bronfenbrenner's bio-ecological systems theory as a lens to explain the findings, this research contributes to the understanding of the experiences of visually impaired students in HE. However, there remains a challenge for physiotherapists in education *and* practice to consider, embrace and ensure that the professional values we hold underpin inclusive educational practices across physiotherapy education for visually impaired physiotherapy students who will become our future colleagues.

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LIST OF ILLUSTRATIONS

DEFINITIONS AND GLOSSARY

AHPSS	Allied Healthcare Professionals Support Service (previously the Physiotherapy Support Service PSS, based at the University of East London (UEL))
BST	Bio-ecological Systems Theory of Human Development
CCTV	Closed Circuit Television
CSP	Chartered Society of Physiotherapy
DDA	Disability Discrimination Act
DSA	Disabled Students Allowance
HCPC	Health and Care Professions Council
HE	Higher Education
HEFCE	Higher Education Funding Council of England
HEI	Higher Education Institution
ICF	International Classification of Function, Disability and Health
LSA	Learning Support Agreement negotiated between student and the HEI
MCSP	Member of the Chartered Society of Physiotherapy
PE	Practice Educator (a physiotherapist who supervises and educates a student on practice placement)
PSS	Physiotherapy Support Service (based at UEL)

QAA	Quality Assurance Agency
RNIB	Royal National Institute for the Blind
UDL	Universal Design for Learning
VI	Visual Impairment
VLE	Virtual Learning Environment
WCPT	World Confederation for Physical Therapy
WHO	World Health Organisation

CHAPTER 1: INTRODUCTION

1.1 Overview of the thesis

This thesis presents a research project undertaken in part completion of Doctor of Education studies at the University of Birmingham, consisting of three separate but related studies that explored, within a case study design, the learning experiences of visually impaired physiotherapy students in Higher Education (HE) in the UK. The thesis is presented in 10 chapters and demonstrates my journey as a researcher, gaining understanding of the experiences of my students, and those studying in other universities in the UK through exploration, and interpretation of the learning experiences that they shared with me.

My aim was to explore how visually impaired students experienced learning in physiotherapy, and to establish how inclusive physiotherapy education was for these participants. The research questions reflected the language of the International Classification of Functioning, Disability and Health (ICF) (WHO 2001) as the theoretical framework, considering the *environmental factors* that served as either barriers or enablers to participating in physiotherapy learning in both university and practice based settings. The three studies were carried out over a period of 5 years, from 2011 to 2016.

The completion of this thesis is timely; the World Confederation for Physical Therapy (WCPT) have published a briefing paper “Access to physical therapist education and practice for people with disabilities” confirming that opportunities for disabled people in physiotherapy have been ‘variable’ (WCPT 2016 p.5). The paper concludes that physiotherapists need to lead by example to promote and support the inclusion of disabled people, through environmental and person-specific strategies into the profession (p.11). My exploratory study (Chapter 5) (Frank et al 2014) was

referenced in this paper. I have also presented my findings from Chapter 6 about university based learning at PhysiotherapyUK, the Chartered Society of Physiotherapy's national conference (Frank et al 2015). This thesis therefore contributes to this debate, through the lens of the ICF, and later, a bio-ecological model, identifying potential factors that may prevent and may facilitate participation in physiotherapy education and the profession, for visually impaired students.

1.2 My personal research context

Having worked for many years in clinical and academic practice as a physiotherapist, I have always strived to be person centred. As a new academic, I was asked to tutor a student with a disclosed visual impairment which is where my story began. Having had limited experience of visual impairment, and no experience of teaching or supporting visually impaired students, I realised that I would need to educate myself as to how best to support this student. Although this student completed his degree and graduated as a physiotherapist, I was not sure whether his experience had been good or bad, and whether I could have supported him better.

Over the next few years I gained more experience in supporting and teaching disabled physiotherapy students and became aware that there was little research into their experiences of learning, less in relation to visually impaired students. There is a long history of blind and partially-sighted physiotherapists in the profession (French 1993, Owen-Hutchinson 1994, Atkinson & Owen-Hutchinson 2005, Owen-Hutchinson & Atkinson 2010, Atkinson & Owen-Hutchinson 2013). In fact, as early as 1987 Teager described the experiences of visually impaired physiotherapists.

My own experiences and interest in supporting disabled students lead to my enrolment onto a Doctorate in Education with clear reasons for doing this research; I wanted to find out how students experienced learning, both in the university setting

and in the practice learning environment. I wanted to know whether they faced barriers to learning, and if so, what they were, and how these affected their learning. I was also keen to establish how they overcame any barriers that they faced in physiotherapy and I also wanted to share this information with academic and practice partners and current students to support them with real-life experiences and evidence. Knowing that my students *had* faced many barriers in learning, and that I hadn't always had the tools to support them, I needed to start to understand why this was, and how being visually impaired impacted on learning physiotherapy.

As a physiotherapist, I was aware of the medical and social models, and of the ICF (WHO 2001), that drew on different perspectives to explain and describe disability making it relevant for my practice, and for my teaching. The ICF also provided a common language, of barriers and enablers to participation, the impact of which I was interested in finding out in my research. I was used to the framework in clinical practice, as it considered how activity limitations and participation restrictions were affected by disability, and I realised that it could provide a theoretical framework to underpin my research questions and methods. Over the course of my studies, my understanding of the ICF changed and I further considered ecological models of development such as Bronfenbrenner's bio-ecological systems theory of human development (BST) (2005) to understand experiences of learning.

As the potential participant population was going to be very small (Atkinson & Davis 2015) and was a specific 'bounded' group of students, I chose to use case study as the design frame, and use qualitative enquiry within a constructivist paradigm to explore the learning experiences of these participants (Cohen et al 2007). As the study was likely to produce several different perspectives about the same phenomena, qualitative methods were appropriate (Thomas 2011). The proposal

and planning for the study began during the third year of my studies, once the taught component had been completed and passed. The taught components have provided a basis for the study, both theoretically and practically.

As I was the sole researcher and a lecturer and physiotherapist, I had to consider this research carefully. I was aware of my own possible bias, and my own beliefs, from my own experiences of supporting visually impaired students in the university setting. I chose to make this explicit from the beginning and asked some of my own students to participate in Study 1. They were involved in pilot testing my interviews and in modifying the questions and the prompts to ensure that the questions would encourage the participants in Study 2 to share their stories with me. I also made it very clear to the participants in Study 2 that I was a physiotherapist and a lecturer and that I wanted their interviews and their data to be honest and insightful. This is discussed further in Chapter 4.

1.3 Aims of the research

A research project was planned with the following broad aims:

1. To produce an in-depth exploration of the learning experiences of visually impaired physiotherapy students in both university and practice based settings using the ICF as a framework for the research
2. To investigate how visually impaired students learn the knowledge, skills and practices in physiotherapy
3. To identify to what extent participation in physiotherapy education is affected by factors that create barriers to, or enable learning
4. To illustrate how teaching and learning processes affect the ability to learn physiotherapy for visually impaired students

5. To use the findings to inform and facilitate accessible teaching and learning for visually impaired students in physiotherapy education.

1.4 Achieving the aims – the structure of the thesis

This thesis contains 10 Chapters. **Chapter 2** considers the context of physiotherapy education that prepares students to qualify and apply to become registered as a physiotherapist. The history of visually impaired people in the physiotherapy profession, and the importance of the Equality Act (OPSI 2010) and policy relating to access and inclusion to HE is also presented. Finally, critical consideration of the social and medical models of disability, the ICF (WHO 2001, 2010) and the BST (Bronfenbrenner 2005) are considered in their application to the context of learning experiences in physiotherapy education, with due consideration of the principles of inclusive design in HE.

A review of the literature in **Chapter 3** identifies that despite evidence of disabled students' experiences in HE, including visually impaired students, there was no research about disabled or visually impaired physiotherapy students at the time the research was planned. A critical review of the literature and its relevance to this project is presented which concludes with the research questions, aims and objectives.

Chapter 4 considers the design, methods and processes used to answer the proposed research questions; a qualitative approach using case study (Thomas 2011). Within the case study, three distinct studies were carried out.

Chapter 5 presents Study 1, an exploratory study using participants known to myself. This study pilot tested the interview process producing data about university based learning, and gained feedback from the participants about the questions, the

content and the utility of the interview structure and process. This process also identified themes that could be explored further in Study 2. The findings of Study 1 were published in the British Journal of Visual Impairment (Frank et al 2014).

Study 2 purposively recruited four participants from the whole student physiotherapist population in the UK via gate-keepers to protect their identity. **Chapter 6** presents the participants' experiences in university based learning, and **Chapter 7** considers their learning experiences within the practice based setting.

Chapter 8 describes the final study in the research project, a reflective study carried out to triangulate the research findings from Study 2. This chapter presents the perspectives of physiotherapy academics about the university based learning experiences of the participants. This study was implemented to gain external validation of the findings.

Chapter 9 integrates the findings from all three studies to show to what extent the research questions were answered and what meaning has been gleaned from the research project. The contribution to theory that this thesis makes to inclusive learning, specifically in participation in physiotherapy education is presented, drawing on both the ICF and BST to interpret the findings of each of the three studies as a case study. The final part of this chapter provides recommendations for inclusive curricula for visually impaired physiotherapy students.

The research project and the thesis are concluded in **Chapter 10,** including an evaluation of the research, with limitations of the research process identified and discussed. Recommendations for future research and practice development conclude the thesis.

1.5 Conclusion

Although research into the experiences of disabled students in HE exists, there is no context specific research investigating visually impaired physiotherapy students. What has not yet been established is how visually impaired students experience learning in physiotherapy, and how they learn the knowledge skills, and practices of the physiotherapy profession. This research is not only of interest to physiotherapy academic and practice staff, and to the students, but the wider HE community too as it also provides some illumination of general inclusive teaching and learning practices.

The next chapter considers the research context, describing the process of becoming a physiotherapist, the requirements for professional registration, and the policy that underpins and supports inclusion of disabled students in UK HE and physiotherapy practice.

CHAPTER 2: THE RESEARCH CONTEXT

2.1 Introduction

This chapter provides the context for the research into the learning experiences of visually impaired physiotherapy students. It considers the philosophical perspective from where the research was carried out, and concepts, definitions and key words that are central to the understanding of the research are discussed. The three focal concepts within the research were; *disability including visual impairment, access and inclusion within higher education* and *physiotherapy pre-registration education* and *practice.* This chapter discusses the definitions and language of disability and considers how disabled and visually impaired people access and participate in HE and physiotherapy education. The unique history of visually impaired people in the physiotherapy profession and the requirements needed to qualify and practice as a physiotherapist are presented, with consideration given to learning the profession of physiotherapy in university and practice based settings.

2.2 Defining disability

To conduct research into the experiences of disabled people it is important to consider what disability is. As a non-disabled person, I cannot perceive or understand how it is to be disabled. However, I am a physiotherapy educator in HE, with experience of teaching and supporting visually impaired student physiotherapists in both university and practice settings. Although this does not qualify me to be an expert, it does allow me to offer a context-specific “outsider” perspective (Corbin, Dwyer & Buckle 2009).

2.2.1 What is disability?

Disability is multi-faceted, it does not have a single definition as it is affected by many things, notably interaction between impairments, social norms, stereotypes, and features of the society in which people live (WHO 2015, French & Swain 2008). The Equality Act (OPSI 2010) identifies that a person is disabled if they have '*a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on their ability to do normal daily activities'*. The World Health Organisation (WHO 2015) defines disability as "*an umbrella term for impairments, activity limitations, and participation restrictions*", defining *impairment* as "a problem in body function or structure; *activity limitation* as a difficulty encountered by an individual in executing a task or action; and *participation* restriction experienced by an individual involved in life situations". It acknowledges that disability is complex by stating that interaction between features of a person's body and features of the society in which he or she lives are affected by disability. Disabled people are, as a group, protected by legislation to ensure that they are not discriminated against and that they are afforded the same rights and opportunities as non-disabled people (OPSI 2010). The reasonable adjustments duty which was introduced within the DDA (1995) mandates that, as far as possible, disadvantages which disabled people experience because of their disability, must be avoided. This means that reasonable adjustments are positively anticipated and provided to avoid substantial disadvantage caused by disability, to ensure that disabled people can fully participate in, for example, the education and other benefits, facilities and services provided for students (Equality and Human Rights Commission 2016). To access support and reasonable adjustments within the remit of the Equality Act at university, students must disclose their disability.

2.2.2 Models of disability

Definitions of disability suggest that a person may be disabled by an individual factor, such as a cause, or impairment, or by social and environmental factors within society. These definitions form the basis for the medical (or individual) and social models of disability (French & Swain 2008). Both models of disability are affected by thoughts, perceptions and beliefs and have opposing perspectives. The medical model considers that disability is a direct result of impairment, is intrinsic to the person, reduces quality of life and causes clear disadvantage (French 2008 p.25). However, the social model suggests that disability is caused by barriers in the environment created by society (Finkelstein 1972 p.8). Oliver (2004 p.21) stated that "the social model is about nothing more complicated than a clear focus on economic, environmental and cultural barriers encountered by people who are viewed by others as having some form of impairment – whether physical, sensory or intellectual".

However, this may be too simplistic; French (2008) suggests that disability cannot be considered in a binary sense; she argues that some disabled people have impairments that can be corrected, e.g. an amputee could wear a prosthesis, or a person who has difficulty walking could use crutches. A person with an impairment may not be disabled in their own home, an environment that is accessible for their needs but is disabled by steps in a theatre that affect their ability to enter the auditorium. However, if the barriers faced by a person are socially created, or are impairment focused, the disabled person may be able to function perfectly well if reasonable adjustments are in place (OPSI 2010), or if support or assistance is provided, therefore removing the barriers created by either an impairment or by the social environment. If a person functions completely in society, regardless of having a disability, they may therefore not *feel* or *identify* as disabled. French & Swain

(2008) question whether a person who is perceived by others to be disabled, but who does not *consider them self* disabled, is in fact disabled. This is a very important concept to consider, as human perception, attitude and assumption about disability can affect how a disabled person functions in society.

The WHO (2011) through the ICF, consider individual and population contexts, reflecting medical and social models of disability; the ICF states that:

"*Disability is not something that only happens to a minority of humanity. The ICF thus 'mainstreams' the experience of disability and recognises it as a universal human experience. By shifting the focus from cause to impact it places all health conditions on an equal footing allowing them to be compared using a common metric – the ruler of health and disability. Furthermore, ICF takes into account the social aspects of disability and does not see disability only as a 'medical' or 'biological' dysfunction. By including Contextual Factors, in which environmental factors are listed ICF allows to records the impact of the environment on the person's functioning".*

The WHO and ICF therefore acknowledge both medical and social perspectives of disability, confirming the basis for a bio-psycho-social model that is a fusion of both models. However, as was suggested at the beginning of this chapter, disability is multi-faceted and has many different perspectives which are discussed further in the next sections.

2.2.3 The language of disability

The language used to describe and consider disabled people is controversial (Clouder 2013). Whether people are considered to be disabled or to have a disability is used differently in the literature. Language used stems from perspectives;

disability can be viewed from a medical or a social perspective as discussed in the previous section; the medical model suggests that people are disabled by a disability, an impairment, or a medical condition that causes their disability, whereas the social model firmly places disability within the context of society, preventing participation and creating disability (French & Swain 2008). A combined approach to disability that acknowledges both medical and social perspectives, such as in the ICF, may reduce this possibly limited and binary approach to disability.

There are variations in the literature in relation to the language used about disability; people may be referred to as "being disabled" or "having a disability". The medical model focuses on the impairment as the disabling factor; this may encourage the use of "having a disability", as the person has an impairment, for example, a visual impairment. However, the social model mandates the use of the term "disabled people", indicating that the person is disabled by society, rather than "people with disabilities" which suggests an individual deficit (Shakespeare 2013 p.19). Shakespeare (2013 p.19) suggests that the term "people with disabilities" is used by people trying to be respectful. Interestingly, the recent publication from the WCPT (2016), the world professional body for physiotherapy, is titled "Access to physical therapist education and practice for people with disabilities". However, the Health and Care Professions Council (HCPC), the UK regulatory body for physiotherapists, uses the term "disabled people", the language mandated by the social model, in their recently published guidance for disabled students in healthcare (HCPC 2015). This guidance provided an excellent discussion of the language they chose, and provided a balanced argument for using "people first" language (e.g. "a person with a disability") and language used mostly within the disability movement, the HCPC and HEFCE; "disabled people" (Shakespeare, Lezzoni and Grace 2009).

2.2.3.1 The language used in the thesis

Within this research project, each participant was asked about the language used in the final thesis, and how they would prefer to be described. Study 1 (Chapter 5) which was published (Frank et al 2014) does however use the language referred to by Shakespeare (2013) as “respectful”. This was used following discussions with the participants involved, and reflected the language used in the journal it was published in, the British Journal of Visual Impairment. However, following further consideration of language in a professional capacity, and in relation to disabled people in healthcare and HE, I chose to use the term “disabled” and / or “visually impaired people” reflecting the language of the social model, and the HCPC (Shakespeare 2013, Clouder 2013). In Study 2 (Chapter 6 & 7), none of the participants expressed a strong opinion about how they were referred. However, some participants did not want to be referred to as disabled, and did not identify as being disabled, supporting the findings of Clouder (2013). The participants in Study 2 were therefore described as “visually impaired”.

2.2.4 Defining visual impairment

Defining visual impairment is not straight forward (Praat & Keil 2003). Wide varieties of problems and conditions impair sight, with significantly varied levels of disability. The International Classification of Diseases (WHO 2010a) define sight in four categories from normal vision, moderate and severe VI and blindness (WHO 2014) suggesting that moderate and severe VI are classed as ‘low vision’ and that ‘visual impairment’ as a definition overall includes blindness. Many other terms are used, for example the RNIB currently use the term “sight impaired” (RNIB 2015) and the NHS refer to irretrievable sight loss as VI (NHS 2012). These definitions exclude those whose sight problems can be corrected by spectacles or contact lenses, although

those whose sight might be improved by medical intervention are included (Open University 2006b, NHS 2012).

The Equality Act (OPSI 2010) defines disability as "a physical or mental impairment which has a substantial long-term adverse effect on his / her ability to carry out normal day to day activities". If a person chooses to register as blind or partially sighted they, (in England and Wales) receive a Certificate of Vision Impairment (CVI) (RNIB 2015). The RNIB states that a person who is registered as blind or partially sighted, will be automatically covered within the Equality Act, and will be able to access support and the provision of reasonable adjustments (RNIB 2015). The Equality Act identifies several examples that affect people with visual impairments; inability to see to pass the eyesight test for a standard driving test or difficulty recognising by sight a known person across a moderately-sized room. Although it might seem useful to need to know a diagnosis or the name of a sight condition, particularly within a medical or healthcare context such as physiotherapy education, Roy (2003) confirms that medical definitions are surprisingly unimportant. Although knowing about a condition or diagnosis may provide context and understanding, it does not detract from the fact that as educators we must ensure that the problems or difficulties caused in HE by the visual impairment are addressed. All of the students who took part in this study had a registered visual impairment, and had disclosed at university.

2.3 Disability and inclusion in higher education

Although the Equality Act makes it clear what is required in UK society, the UK Quality Code (QAA 2013) is explicit in relation to the responsibilities of Higher Education Institutions (HEIs). They identify that their code “makes clear what HE providers are required to do, what they can expect of each other, and what the

general public can expect of them." As HEIs are responsible for student education from pre-entry through to graduation, they mandate that prospective disabled students are well informed to assist their choice of a programme "with an understanding of the academic environment in which they will be studying and the support that will be made available to them" (QAA 2012 Part C Indicator 3 p.6). This means that HEIs must also provide information about how they provide an inclusive learning environment that ensures equality of opportunity for individual students. This should include indicative information about teaching, supervisory and learning support staff, learning and teaching spaces, libraries, specialist learning environments such as laboratories, and communication and information technologies, including Virtual Learning Environments (VLEs) (QAA 2012). This also requires them to state how they will anticipate and respond to the diverse needs of students, meeting the requirements of the anticipatory duty within the Equality Act (OPSI 2010) (QAA 2012 Part C Indicator 3 p.7). There is specific mention of the removal of arbitrary and unnecessary barriers, accepting that disabled students still do not have fully accessible or inclusive education at university (QAA 2012 Part C Indicator 3 p.8). However, the most recent update to the UK Quality Code (QAA 2013 Part B) clearly promotes a shared responsibility for developing and enabling teaching and learning within HEIs, where partnership is the key underpinning philosophy, whilst accepting that the boundaries of responsibility are fluid and unclear (p.3).

2.3.1 Reasonable adjustments in teaching and learning

As visually impaired students learn in the same classroom as their sighted peers, teaching must be accessible to all involved. According to the Disability Rights Commission (Stevens 2013a) disability only arises when students have to interact

with ‘inaccessible courses and institutions’. This means that if teaching and learning is inaccessible to a visually impaired person, the institution or course team must provide anticipatory and reasonable adjustments to the way they teach or provide education to ensure that it is accessible. Reasonable adjustments are put in place to address disadvantages related to provision or practice, physical features or auxiliary aids (Felsinger and Byford 2010, OPSI 2010b). This may mean that alternative formats or methods are needed, requiring the lecturer or the practice educator, who are duty-bound in law, to make adaptations or adjustments to teaching, learning or assessments (OPSI 2010b, QAA 2013). Many practical examples in education (Powell 2003, Stevens 2013, Stevens and Walters 2015) and physiotherapy (Owen-Hutchinson and Atkinson 1998 & 2010) have been outlined; essentially, reasonable adjustments must be *individual, anticipatory and inclusive* (Felsinger and Byford 2010 p.4-5). Within the Equality Act (OPSI 2010), HEIs are permitted to treat disabled students more favourably than a non-disabled student by providing reasonable adjustments to ensure that the disabled student can participate in the learning experience alongside their peers; ensuring that they are not disadvantaged because of their disability.

However reasonable adjustments can only be made where there is a culture of support and where a need is identified and recognised by the student and staff (May & Bridger 2010, Felsinger and Byford 2010, QAA 2013). Tinklin et al (2004) suggested that although there were signs of a culture change, it would take a long time for inclusive education principles to become accepted, integrated and embedded in HE. Barnes (2007) agreed, suggesting that learning support was a novelty for the minority and that there was reluctance to accept that support was justifiable and necessary to facilitate inclusion. More recently the UK Quality Code

(QAA 2013) clearly identified the legal and ethical responsibilities of education providers to provide inclusive education for all; HEIs must protect and uphold the rights of social groups with protected characteristics (such as disabled students) within the remit of the Equality Act suggesting that this required culture change was still necessary (OPSI 2010, May & Bridger 2010).

2.3.2 Creating an inclusive learning environment in higher education

There has been a drive to embed inclusive education for many years, with many authors evaluating provision, culture and practices in many HEIs, suggesting that inclusive HE is still developing (Thomas & May 2010, May & Bridger 2010, Wray 2013). The HEA (2015 accessed online) defines inclusion as:

'the enabling of full and equitable participation in and progression through higher education for all prospective and existing students'

And,

'inclusive learning and teaching recognises all student's entitlement to a learning experience that respects a diversity, enables participation, removes barriers and anticipates and considers a variety of learning needs and preferences'

An inclusive learning and teaching culture in HE enables students to reach their potential, developing academically, personally and professionally (Wray 2013, Offa 2017). Indeed, the remit for HEIs is not only to ensure *access* to HE, but to ensure that students can actively *participate in* learning and are enabled to be successful in HE and beyond (BIS 2014). To be inclusive, HEIs should consider the diversity of their student body and embed principles of equality in the design, planning and evaluation of all aspects of their provision (Thomas and May 2010).

There has been a change in focus within HE concerning inclusion, which brings with it many tensions in relation to disabled students. To access HE in the UK, disabled students are supported to gain reasonable adjustments through a variety of sources; the DSA (Disabled Students Allowance - a non-means tested scheme that enables disabled students to access funds for specialist equipment, support and expenses associated with their disability), the Disability Support Team within the HEI, and their academic tutors. However, the desire to develop inclusive learning environments and practices is not new. In 2015, the UK government proposed changes to the DSA, suggesting that HEIs should take greater responsibility for supporting disabled students through anticipatory adjustments, and inclusive learning practices, rather than through individualised support (BIS 2015). These changes reflect the principles of inclusive curriculum design that encourage reasonable adjustments for disabled students to be pre-empted and if necessary reduced to reduce stigma and increase diversity in HE (May & Felsinger 2010, Morgan & Houghton 2011, Porter 2013).

However, whilst these proposed changes are necessary, and should be applauded in the name of equality, tensions remain for individual students with individual impairments such as VI. Students have individual characteristics and support needs, for example dependent on schooling, prior educational experience and personal attributes and skills (Hewitt et al 2017). Nevertheless, not all students arrive in HE with the necessary abilities to actively participate in HE, irrespective of their intelligence (Hewett et al 2017). Some of these aspects of education are not specifically considered ‘core’, for example, mobility and navigation, access to information (paper, electronically or digitally), and social and relationship skills (McLinden et al 2016, Douglas et al 2011). Hewett et al (2017 p.106) refer to these as the ‘additional curriculum’. These potential barriers may continue to prevent

participation of visually impaired students within inclusive learning environments despite greater emphasis to reduce individualised support through the changes to the DSA (BIS 2015).

2.3.3 Inclusive learning and teaching curricula

Inclusive curricula respect students' individual needs whilst advocating that education should be effective for all students, rather than just those with protected characteristics within the Equality Act such as disabled students (Morgan & Houghton 2011a, OPSI 2010). Despite policy and legal mandates, inclusive learning is not assured in all HEIs as students still face barriers (Wray 2013, Morina et al 2014, HEA 2015). Enabling students to engage with and participate in learning requires a culture of inclusion (Porter 2012, Piskur et al 2013). An inclusive curriculum is one where entitlement to access and participate in a course is anticipated, acknowledged and considered for *all* students (Morgan and Houghton 2011). However, this requires educators to embed principles of *inclusive design* by ensuring that curricula are anticipatory, flexible, accountable, collaborative, transparent, and equitable (Morgan & Houghton 2011 p.12).

Inclusive curriculum design acknowledges the need for alternatives to suit many people's needs rather than it being a 'one size fits all' approach (Rose 2000, May & Bridger 2010). It recognises the diversity within the student body and provides choice, as it is student-centred (Heelan et al 2015). Rose (2000 p.67) a proponent of Universal Design for Learning (UDL) identified that planning and delivering learning should, from the outset 'accommodate the widest spectrum of users' which would include disabled people (Morgan & Houghton 2011, Porter 2012). Learning can be made accessible for all, through multiple means of presentation, using different teaching strategies for different learning styles, and providing numerous

opportunities for students to engage with teaching material (Izzo 2012). The proposed changes to DSA include a greater emphasis on the use of technology in inclusive learning (BIS 2015). This requires commitment at an HEI level to establish an inclusive culture (Offa 2017). However, staff, who, according to May & Bridger (2010) are key to embedding inclusion, still need access to development in inclusive curriculum design to ensure that it is provided (Morina et al 2014, BIS 2015).

However, as discussed in section 2.3.2, students are individuals; not all students make the transition to HE easily, or have the skills necessary to access an inclusive curriculum, despite it being designed to include them. Whilst the principles of inclusive education are essential to improve education for all, and to ensure that visually impaired students have the same opportunities to participate in physiotherapy education, it could be argued that a future where 'inclusive teaching is the norm' may never be fully achievable, especially where students are respected for being individuals (May & Bridger 2010 p.29).

2.4 Becoming a physiotherapist

Physiotherapy is a profession as well as a subject; 'the aim of professional education is to make a distinctive contribution to students' knowledge base and their socialisation into the occupation' (Smeby 2007 p.208). Therefore, as well as meeting the academic requirements of the physiotherapy degree course the student physiotherapist must also meet the requirements of the physiotherapy profession in the UK.

Physiotherapy evolved from nursing where medical massage was practised in the 1890s into the profession that now exists (Barclay 1994, Kell & Owen 2008). Physiotherapy began to identify itself as a profession by aligning itself with medicine in order that referrals would be secured and professional status obtained (Kell &

Owen 2008). This also ensured that physiotherapists could practise autonomously, a further sign that physiotherapy had indeed become a profession in its own right. Having acceptance of the medical fraternity provided stability and status in the early years of the profession which may have also inadvertently defined physiotherapy as a scientific-knowledge based profession (Kell & Owen 2008), aiding the profession in securing support for degree based education in the 1990s (Palastanga 1990). Although there were a minority of institutions offering a degree in physiotherapy prior to the late 1990s, qualification as a physiotherapist was almost exclusively by graduate diploma, in "schools of physiotherapy" where the focus of practise was on massage, mobilisation and exercise (Barclay 1994). Physiotherapy became an all graduate profession in 1992, and as all accredited courses in the UK are professionally orientated they are strongly regulated (Bithell 2007).

2.4.1 Regulation and membership for chartered physiotherapists

Becoming a physiotherapist requires students to meet academic, clinical and professional standards throughout their education and into their professional lives (WCPT 2016). Physiotherapists are regulated by the Health and Care Professions Council (HCPC) and have professional membership through the Chartered Society of Physiotherapy (CSP) that enables them to use the title Chartered Physiotherapist and use Member of the Chartered Society of Physiotherapy (MCSP) after their name. Physiotherapists must have completed an under-graduate or pre-registration physiotherapy degree course that satisfies the regulatory requirements of the HCPC, and the academic and practise requirements of the Quality Assurance Agency (QAA 2001) and the CSP (2010). The HCPC approve courses that fulfil their Standards of Education and Training (HCPC 2009) which ensures that, upon graduation, students will be able to apply to register with the HCPC and work within the Standards of

Proficiency (Physiotherapists) (HCPC 2013) and the Standards of Conduct, Performance and Ethics (HCPC 2016). The CSP assess courses using their Learning and Development Principles (2010) which reflect the Code of Professional Values and Behaviours (CSP 2011).

2.4.2 The framing values and behaviours of the physiotherapy profession

Physiotherapy students and their qualified peers must all practise within the Code of Professional Values and Behaviours (CSP 2011) and the Standards of Conduct, Performance and Ethics (HCPC 2016). These codes and standards are central to guiding professional practice, providing a 'touchstone' on which to model our expected behaviours (Scammell 2014). Greenfield and Jensen (2010 p.89) suggest that these codes provide a 'moral template' for professional conduct, that establish the responsibility that physiotherapists and other healthcare professional must accept in contemporary healthcare.

Values are things that are held in high regard, that have worth, and that hold importance (Oxford English Dictionary 2016). Values also underpin the principles or standards of behaviour, clarifying what is important in (professional) life. The values that the physiotherapy profession holds are explicit within the Code (CSP 2011) clarifying the important principles that physiotherapists work within, and embedded through professional socialisation (Aguilar et al 2014).

2.4.3 The history of physiotherapy as a profession for visually impaired people

Physiotherapy has long been an accessible profession accessible for visually impaired people (WCPT 2016). Although being physically disabled historically excluded entry to physiotherapy education (CSP 1984 cited in French 1988), having a visual impairment has never been a barrier to entering the physiotherapy profession. The traditional route to qualification of a visually impaired person as a

physiotherapist was by the successful achievement of a graduate diploma in physiotherapy from the RNIB School of Physiotherapy. Although learning in the RNIB school was not the only route to qualification for a visually impaired person, it was the most common (French 2006). When the RNIB School closed in 1996, visually impaired students chose their institution and studied physiotherapy alongside their sighted peers, reflecting the developing principles of inclusive education described by Booth et al (2000), the HEA (Morgan & Houghton 2012) and the QAA (2013). Whilst there is no intrinsic reason why curricula should be inaccessible (Moran 2009, Veck 2007), the publications of "Into Physiotherapy; Welcoming and supporting students with Disabilities" (Owen-Hutchinson & Atkinson 2010), recently updated guidance from the HCPC for disabled students (HCPC 2015) and the briefing paper from the WCPT about including disabled people in physiotherapy (WCPT 2016) suggests that barriers within physiotherapy education still exist.

2.4.4 Disabled students in physiotherapy

Although it is accepted that students have different learning styles and preferences (Kolb 1984, CSP 2005), and that being visually impaired is not an intrinsic barrier to becoming a physiotherapist (Owen-Hutchinson et al 1998, Clouder 2013), all students are required to reach the standards set out by the professional bodies described above. It is therefore important that all students can access learning opportunities in the classroom, through independent study and in practice based learning.

Following the publication of the Disability Discrimination Act (DDA) in 1995, at a similar time to the closure of the RNIB School of Physiotherapy in London, the Health Professions Council (now the HCPC) (1997) published guidance for disabled

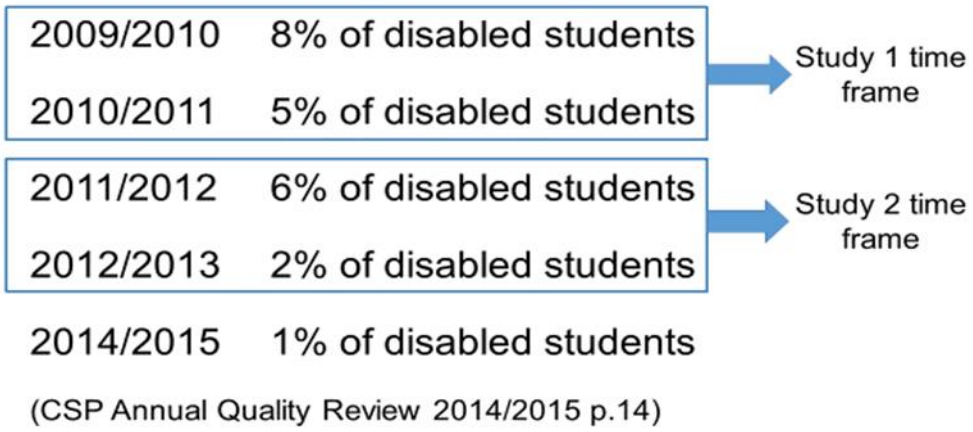
students who were considering entering healthcare professions, including physiotherapy. This document identified that some disabled people had been unable, rightly or wrongly, to become a healthcare professional because of their disability. The guidance made it clear that under the DDA (OPSI 1995) and within the HPC's responsibilities as a registering body, disabled students could choose to become healthcare professionals at a university of their choice, if they met the academic and entry requirements. In relation to disabled students and reasonable adjustments, they stated:

"*We need to know that these standards are being met, but we do not need to know how the standards are met. What this means is that registered health professionals can make adjustments in their own practice to meet our standards without being concerned that they can't be registered with us* (HPC 1997 p.7)".

This document confirmed that for visually impaired students, it was possible to become a physiotherapist, and register with the HPC, now the HCPC. This guidance was reviewed and re-published in 2015 and visually impaired students continue to qualify, register and practise as physiotherapists.

There are 35 institutions that provide physiotherapy education, and of those 70% offer undergraduate education. Each institution provides demographic data to the CSP annually that incudes numbers of disabled students, and importantly, those who have a disclosed visual impairment. The data that covers the period of this research project (2010 – 2015) shows that the numbers of students disclosing a disability has doubled, from 6% to 12% (Atkinson & Davis 2015 p.13). Despite this, Figure 1 shows that the number of 1st year students with a *disclosed visual impairment* has reduced annually since my studies began;

Figure 1: *Data showing percentages of disabled students with disclosed visual impairments on physiotherapy courses in the UK at the time of this study (taken from Atkinson & Davis 2015 p.14)*



2.5 Learning physiotherapy

2.5.1 The educational context

For this study, context is an important part of classroom effectiveness; learning must be relevant, and have meaning to those taking part (Alexander 2000). Physiotherapy students therefore learn physiotherapy skills, behaviours and practices relevant to the real purpose of physiotherapy education – producing competent physiotherapists.

Student physiotherapists initially learn their physiotherapy skills in an organised classroom setting (Ernstzen et al 2009), by learning the theory underpinning practise. Within the classroom situation, students are explicitly taught professional skills, practices and behaviours by the lecturer; Swanick and Morris (2010) refer to this as 'learning–as–acquisition'. Learning physiotherapy involves information gathering from patients through subjective assessment (via communication) and objective clinical examination (through observation, measurement, and analysis) where hypotheses gained from the subjective assessment are tested out (Petty 2006

p37, Higgs et al 2008). Skills are learnt through front-loaded instruction (Brown et al 2011), involving observation of a qualified physiotherapist before practising on a peer, receiving feedback, and repeating. However, skills and practices may also be learnt implicitly through exposure to academic staff demonstrating these practices within the classroom, and later in the practice based setting where students experience 'learning-as-participation' (Skøien et al 2009, Swanick & Morris 2010, Thomson et al 2014).

2.5.2 The practice based learning context

Practice based learning is an integral component of physiotherapy education (Skøien 2009, Thomson et al 2014). Alongside the academic requirements of the degree course, students must complete a minimum of 1000 hours in supervised practice learning to enable them to meet the Standards of Proficiency (Physiotherapists) (HCPC 2013) on graduation. The Quality Assurance Standards (CSP 2012) for Physiotherapy make it clear that physiotherapy students must be adequately supervised when carrying out physiotherapy related activity.

Practice learning occurs simultaneously at an individual and social level, but always within a specific context (Patton et al 2013). It has been suggested that learning in practice can lead to repetition of accepted practices within a profession (Hardy & Lingard 2008), whilst also providing a safe starting point for the student from which to practise. This also supports Eraut's (1994) assertion that professional values, beliefs and practices may be learnt through exposure and immersion in professional practise. Hall (2005), Wenger (1998), Lave & Wenger (1991) and Bourdieu (1977) all agree that professional learning requires exposure and access to the profession being learnt, supporting the importance of supervised experience in the practice setting (HCPC 2012, CSP 2012).

2.5.3 Professional socialisation

Professional socialisation is a fluid and changing phenomena (Hammond et al 2016), informed by university and practice, where the norms, the values, the practices and the behaviours of the profession that a student wishes to belong are learnt (Maranon and Isla Pera 2015). This begins in the classroom, influenced by academic staff and peers, and is further developed within the practice setting where qualified physiotherapists influence professional learning through modelling (Maranon and Isla Pera 2015). Socialisation is co-constructed by attitudes, values, hierarchies and practices and is influenced by awareness of personal and workplace beliefs especially in relation to student learning in practice. However, it is important to understand that personal and professional judgements within physiotherapy cannot exist in a vacuum; professional identity develops over time, through experience and in relation to a reference group of professionals; physiotherapists, within a contextual workspace (Greenfield and Jensen 2010). Kemmis and Trede (2010) go further, identifying the importance of collective responsibility that physiotherapists take to educate future practitioners, through renewal and rejuvenation of practice to meet the challenges of changing contexts in healthcare.

2.5.4 Inclusive learning and teaching in physiotherapy

Although access for visually impaired physiotherapy students has been assured over many decades, HEIs have more recently had to consider the principles of *inclusion*, rather than access. The Equality Act (2010) legislates to ensure that the rights of people with protected characteristics such as disabled students are upheld by HEIs, who, with the government, are promoting inclusion to improve success and progress beyond HE, into employment for example (Offa 2017, BIS 2014). Access suggests that a visually impaired student can enter university to become a physiotherapist, as

discussed in section 2.4.3. However, this does not consider *how* visually impaired students participate in learning physiotherapy to gain employment as a physiotherapist upon graduation.

During the very early development of this research, I was aware that approaches to teaching and supporting disabled students were based on dealing with the impairment, rather than the individual students' needs and prior experiences which tended to support the medical model, predominant in healthcare and healthcare education. Much of the support processes were led by the academic and support staff, and staff were guided as to how to address the problems caused by the impairment by the Physiotherapy Support Service (PSS) at the University of East London, and by useful and very necessary guidance from text books like "Breaking down barriers" (Owen-Hutchinson' et al 1998). In 2010, Owen-Hutchinson and Atkinson produced another document for the CSP, entitled "Into Physiotherapy. Welcoming and supporting disabled students". This document was a greatly updated and extended addition to their 1998 book, and offered specific guidance and information not only for physiotherapists, but other healthcare professionals too. Although the focus was on reasonable adjustments, it did proactively consider how visually impaired students could participate in their learning, and mandated a student-centered approach. However, as discussed in Section 2.3.2, BIS (2015) proposed that HEIs should take greater responsibility to make learning environments inclusive with *less* reliance on individualised support, and greater use of technology. This may present some tensions in relation to physiotherapy education. Firstly, student physiotherapists have different and individual experiences before they begin university. Hewett et al's (2017) observations about visually impaired students may also apply to student physiotherapists; not all students have the attributes or skills to

participate in inclusive learning processes which may further preclude exclusion and the creation of barriers. Secondly, the increasing use of technology is positive, it provides flexibility and different opportunities to learn for students with different learning styles and preferences (Izzo 2012). However, this may also present some challenges in physiotherapy where patient focused handling and clinical skills are taught and learnt. Although there is increasing use of technology through simulation in physiotherapy (CSP 2014, Gough et al 2013), which can enhance learning in a safe environment, there will always be a need to learn physiotherapy skills and practices in a classroom and in a healthcare setting, with people and patients. However, for inclusion in physiotherapy to be assured, there needs to be consideration of inclusive principles in learning (Rose 2000, Wray 2013), desire to encourage active participation with students (Hewett et al 2017) and analysis of individual students' support and learning needs (May & Bridger 2010) which may feel contrary to the current proposals by BIS (2015).

2.6 The evolution of theoretical approaches within the research project

My personal experiences as a lecturer required me to consider how having a visually impaired student in class impacted on teaching and learning. So, although the models of disability discussed in section 2.2.2 considered disability from a medical and social perspective, I felt that the issues faced by visually impaired physiotherapy students may not be fully represented by these models individually, and decided to draw on frameworks that accepted both medical and social model perspectives, considering impairments and social issues that disabled people face in participating in activities within their lives.

2.6.1 The International Classification of Function, Disability and Health (ICF)

The ICF is an internationally accepted framework that measures health and disability at both individual and population levels (WHO 2015), and is well known within physiotherapy practice. It is an accepted theoretical framework for classifying and describing function and disability (Jelsma 2009, Maribo et al 2016) providing a 'common language' that is used and understood internationally (Maribo et al 2016, WCPT 2016). Through the universal language of the ICF, 4 specific domains in relation to functioning and disability are considered:

1. Body functions and structures
2. Activities and activity limitations
3. Participation in all areas of life, and restrictions
4. Environmental factors, and whether these are **barriers** or facilitators (**enablers**)

(WHO 2001, WHO 2010)

The ICF therefore considers environmental factors, that are essentially neutral, but which can act as either **barriers or enablers** to participating in life, for example, in HE and training for a career. It clearly identified that impairments (such as visual impairments), along with environmental factors, create barriers to full participation in life, however environmental factors may also *facilitate* participation, providing the term 'enablers', supporting the WCPT's (2016) observation that the ICF focuses on people's abilities, rather than their disabilities.

Although Jelsma (2009 p.1) suggested that the ICF represented an 'important conceptual framework for understanding and unpacking the experience of disability',

a recent review of the literature identified that the ICF had been criticised for not clearly defining participation, and for the apparent lack of the subjective experience of participation that people have (Piskur et al 2014). Certainly, the domains of the ICF are distinct and there is little consideration of how they integrate or affect each other, although they clearly must do. The purpose of this research was to explore the learning *experiences* of visually impaired physiotherapy students; through explicit questioning using terms from the ICF (barriers and enablers) to identify the factors that affected learning physiotherapy, to provide insight and explanation as to how these influences affected learning either positively (enabling learning) or negatively (by creating barriers to learning). By using the ICF to underpin the research questions and qualitative methods which consider the subjective and personal learning experiences of visually impaired students, some of the criticisms of the ICF are addressed. The ICF therefore offered a framework upon which this research could be based, providing an understanding of disability that respects both the impairment and the other factors that restrict or enable activities and participation in life, and providing the language for the research questions (section 3.5) and the methods (Chapter 4). The ICF has been used successfully in previous research to provide a theoretical underpinning, specifically in visual impairment (Douglas et al 2007, 2011) supporting my decision to use the ICF and its 'common language' to develop my research methods.

2.6.2 A bio-ecological theory?

Although I didn't become aware of, or choose to use a bio-ecological model as a theoretical approach to my studies, I did begin to consider the merit of this approach in the analysis and interpretation of my findings in Chapters 5, 6 and 7. Bronfenbrenner's Bio-ecological Systems Theory of Human Development (BST) was

originally proposed to explain development through time by placing an individual at the centre of a series of concentric circles that represent developmental influences (Bronfenbrenner 2005). This framework, unlike the medical / social model and the ICF identifies that these influences take place at different times and in different amounts, with the individual playing an important role in their *own* development (Tudge et al 2009). Whilst the ICF places a great emphasis on participation which is vital in constructivist approaches to education, the individual student must be central to any educational process, rather like in physiotherapy where patients centre care. This approach reflected my own approach to teaching and learning, and was reflected in the findings of my preliminary study which is presented in Chapter 5. The BST provided a more holistic approach that considered the student within their educational context, whilst it also recognised the layers of influence (Hewett et al 2017); I was very aware of these in my own experiences working with VI students. This BST provided a holistic approach to the interpretation of my studies, whilst respecting the principles of the social model, and using the language of the ICF.

I will return to BST in Chapter 9 where I consider the findings of each study holistically as a 'case study'; the findings will be discussed in relation to the influences on learning experience in physiotherapy. This approach, as I will discuss in Chapter 9, provided a broader, holistic model than the binary medical and social model, and the rather 'static' ICF.

2.7 Conclusion

This chapter has considered the contextual issues that affect and underpin the pre-qualifying education of physiotherapy students in the UK. It has shown how students must learn their profession through theory, practice and socialisation to meet the professional and legal requirements of the profession, considering standards, values,

and behaviours. It has identified that through legislation and policy, disabled students, including those studying physiotherapy should be able to participate in HE with equitable and inclusive opportunities to learn their subject, and in the case of physiotherapy students, their profession. Physiotherapy has a history of being an accessible profession for visually impaired people but factors that create barriers to university and practice based learning remain. Finally, this chapter has considered the theoretical underpinning for the research project, and has shown how the use of underpinning theories evolved throughout the process. Chapter 3 reviews the literature around disability and physiotherapy education to establish the need and justification for this research.

CHAPTER 3: REVIEW OF THE LITERATURE

3.1 Overview

This chapter provides a rationale for the research project by critically reviewing relevant and current literature (Aveyard et al 2011). Due to the time that this thesis has taken to complete, the process of reviewing the literature occurred in two phases:

1. Preliminary review of the literature to ascertain the need for the research project (2010) and to prepare interview schedule for Study 1 and Study 2 (2011)
2. Final review of the literature prior to Study 3 and prior to commencement of write up of thesis (2015)

The review of the literature was undertaken to identify previous research into the experiences of disabled and visually impaired students within HE, and physiotherapy education. It identified that there was little research into the specific experiences of disabled students, and particularly, of disabled healthcare students; there was a clear gap about the learning experiences of visually impaired physiotherapy students that this research could fill. Both university and practice based learning settings were considered, and again, there was limited literature about practise despite its essential place in physiotherapy education.

A critical review of the literature is presented which demonstrates how the literature has guided, and refined the research questions, and has contributed to the development of the semi-structured interview which is discussed in more detail in Chapters 4 and 5.

3.1.1 Purpose of the literature review

A literature review provides evidence about the general and specific aspects of the research topic which, when reviewed, identify gaps in the literature which could be filled with the findings from the research project (Aveyard 2010). It is now many years since Hurst (1996) stated that the voices of disabled students in HE were missing from the research literature. This claim has been addressed in part by Fuller et al (2004b p.303) who agreed, suggesting that "the voice of [disabled students] themselves has hardly been heard" when undertaking one of the largest pieces of funded research into the learning experiences of disabled students in HE. To clearly identify the purpose of this research project, and to assess Fuller's claims in relation to visually impaired physiotherapy students, this literature review was undertaken.

3.1.2 Developing tentative research questions

Aveyard (2010 p.6) considers that readily available evidence can take many forms; books, websites, journal articles and search engine outputs. However, this creates a problem of quantity and quality; The Centre for Research and Dissemination (CRD) (2009) suggest that the research topic and early tentative research questions can provide focus for the review. My *tentative* research questions devised during the taught part of my studies in 2010 were:

1. *How do visually impaired students learn physiotherapy?*
2. *Are visually impaired students' experiences of learning physiotherapy the same or different to their sighted peers?*
3. *What are the barriers and enablers to learning physiotherapy?*

These questions and the research topic, the learning experiences of visually impaired physiotherapy students, suggested that the focus of the literature review should be on:

- Visually impaired students
- Experiences of learning in HE
- Barriers and enablers to learning in HE

3.2 The literature search strategy

A preliminary scoping search was carried out using electronic databases of bibliographic material held at the University of Birmingham over a period of six months from November 2010 until March 2011 for a piece of assessed work for the Taught part of my Doctoral study. As the project considered the learning experiences of physiotherapy students it was important to choose databases that would retrieve relevant literature about HE, physiotherapy education, and visual impairment. The following databases were searched to ensure that as far as possible, all relevant literature was accessed (CRD 2009, Aveyard 2011): Medline, Cinahl, Embase, British Educational Index, Australian Educational Index, ERIC (USA), ProQuest (ASSIA and Health Sciences). Two stages of preliminary searching were carried out; the first stage was carried out using the following key words (CRD 2009 p.23);

1. ***higher education and/or university education***
2. ***disability or disabled***
3. ***barriers***
4. ***enablers***
5. ***visual impairment or visually impaired or partially sighted or blind***

The key words were used singly and using “and/or” to identify the most relevant articles. The following inclusion criteria were then used to search within the preliminary search (Aveyard 2014):

1. Research participants must be *disabled / visually impaired students* and/or with *disabilities or visual impairments in HE*
2. Publication must detail a *research* study investigating *experiences of learning or studying in HE*
3. *Qualitative or mixed methods* design must be used
4. Publication must have been made within *last 15 years*
5. The publication must have been in English

The second stage allowed the items retrieved to be combined with “AND” *physiotherapy or physical therapy* to identify whether any publications relating specifically to the experiences of physiotherapy students existed. As it became clear that there was little specific physiotherapy literature, the search was widened to include *disabled healthcare students*, and to ensure that the professional practise components were included, *clinical placements* or *practice learning* or *fieldwork* were combined with the keywords within the search. The timescale of publication was also increased and international publications were included in the search.

Titles and abstracts were then reviewed per the inclusion criteria and any irrelevant publications removed. Reference lists of retrieved articles were used to identify publications not identified by the electronic search, ensuring completeness (Aveyard 2014 p.90). The review also considered books and grey literature that might provide context and underpinning for the study (Aveyard 2011), especially in relation to policy, legislation and the profession.

3.2.1 The review process

It was not possible to carry out a full systematic review due to the number and quality of papers identified within the scoping stage of the review; a large variety in design, participant number and quality of content was identified. However, a systematic *process* was used to ensure that all relevant material was reviewed and discussed in relation to the overall aims of the study (Aveyard 2014). This was guided by the CRD's guidance for undertaking reviews in healthcare (CRD 2009) and the Critical Appraisal Skills Programme (CASP) Qualitative Checklist (2008).

3.3 Introduction to the review of literature

Hurst (1996) discussed the emergence of disability research as a new discipline that included disabled students in HE. Although disabled students have always been present in HE, their presence may not have been visible or accepted and incidences of discrimination due to fear or ignorance have been recorded (Miller et al 2009, Nolan et al 2015). There has been an increase in the amount of research published about students in HE since the publication of the DDA (OPSI 1995), Special Educational Needs Act (OPSI 2001) and most recently The Equality Act (OPSI 2010). These policy documents have outlined the legal responsibilities of those providing education to disabled students. Since then, there has been a wealth of research into the experiences of these students in HE.

Research into disabled students in HE has provided insight and evidence into the experiences, barriers and enablers in learning. It has discussed transition (Vickerman & Blundell 2010, Redpath et al 2013), disclosure (Borland & James 1999, Stanley et al 2007), identity (Borland & James 1999, Goode 2007, Evans 2014, Riddell & Weedon 2014), barriers (Borland & James 1999, Tinklin & Hall 1998, Fuller et al 2004a & 2004b, Healey et al 2006, Goode 2007, Bishop & Rhind 2011,

Redpath et al 2013), enablers (Holloway 2001, Fuller et al 2004a, Bishop & Rhind 2011), assessment (Hanafin et al 2007, Waterfield & West 2008, Papadopoulis & Goudiras 2004) and inclusion (Claiborne et al 2011, Papasotiriou & Windle 2012, Kioko 2014).

There has also been specific research into the experiences, barriers and enablers of students with named disabilities such as mood disorders (Demery et al 2012), visual impairments (Bishop & Rhind 2011, Reed & Curtis 2012) and hearing impairments (Richardson et al 2000). And disabled students studying different courses and professions such as Geography (Hall, Healey & Harrison 2004), modern languages (Lewin-Jones & Hodgson 2004), Physical Education (Herold & Dandolo 2009), Medicine (Miller et al 2009), Occupational Therapy (Gitlow 2012) and Nursing (Ryan et al 2011, Wray et al 2013, Tee & Cowan 2010, Ashcroft 2008).

There has also been evidence to show that through analysis of academic results and outcomes at degree level that there was little difference in attainment and degree outcome between disabled and non-disabled students (Riddell et al 2005, Richardson 2009). However, although outcomes overall may be equally good for disabled students, some disabled students experienced significant barriers to education which may have affected degree outcome.

3.3.1 The experiences of disabled students in HE

One of the first large scale studies that focused purely on the experiences of HE for disabled students was carried out by Tinklin & Hall (1998). This case study provided the first insight into a broad range of students as the sample was gained from a variety of Scottish HE institutions; a preliminary survey of Disability Co-ordinators enabled the researchers to access institutional information about disabled students such as numbers, disability types and policies for support. Twelve students were

chosen to participate from a volunteer set; potential participants were accessed via the disability co-ordinators then chosen from different contexts and circumstances that would provide a breadth of experience.

As this was the first piece of research to investigate the experiences of disabled students it was important to gain breadth which the authors succeeded in doing by choosing participants in exploratory research to illuminate the research issue in question. Although the number and choice of students selected to interview provided breadth of experience, it did not necessarily gain depth which was a weakness of the study. They justified their reasons for choosing twelve participants; time to collect both interview and observation data and geographical distance were key factors. However, despite low numbers, the students were from a selection of universities which does increase validity as their learning experiences cannot be explained by the attitudes, practices and culture of one institution alone.

The study employed a case study design which utilised observational shadowing of each participant for one week as well as face-to-face interviews. It was possible that having a researcher spend time with a participant could affect the actual day to day life shown and may, therefore, not reflect the “real” or normal situation; the Hawthorne Effect, a possible disadvantage of the ethnographic approach to research (Newby 2014). However, having more than one type of data is a feature of case study design (Yin 2009, Thomas 2011) and this was viewed positively as the interview data could be triangulated. The research was further strengthened by revisits to all participants within the same academic year to gain further insight and depth of their university or college experience.

Tinklin & Hall’s (1998) paper presented each participant in terms of their disability; although disabilities varied, the issues that each faced showed many similarities with

respect to choosing and entering HE including induction and disclosure, and academic issues such as experiences with staff, support, equity and choice. It was clear that differences existed between those who were proactive about their disability support needs and those who were not; even when support had been identified it was not always provided as it should have been.

Although the study's findings were described in detail and were discussed well, it was unclear as to how the information had come about; whether from the interviews or the observation. However, the analysis of the findings showed that there were six areas that HE institutions should consider in the education of disabled students, *entry and admissions, physical access, teaching and learning, assessment, support and monitoring*. In summary, this study was the first to provide an in-depth view of the experiences of disabled students in HE, told from the students' own perspectives.

Slightly later, Borland and James (1999) investigated the social and learning experiences of disabled students in a single HE institution in Wales. Like Tinklin & Hall, Borland & James used a case study design, carrying out an exploratory evaluation of institutional policy documentation in relation to disability, followed by interviews with Senior Tutors and representatives of the central university. The final phase consisted of semi-structured interviews with twenty-two students representing all three years of undergraduate study. All students had a physical or sensory disability, however it was unclear how the participants were identified or selected. Of interest to my research, three participants were visually impaired; however, it was not possible to identify these students in the results. Analysis and findings integrated both student and staff responses which provided a balanced view of what was perceived to be happening in the university. Borland & James (1999) identified four

key areas of concern from their findings; *disclosure of disability, access, quality assurance and disability policy*. It was clear that there were both contradictions and mismatches in the views of students and staff. Fear of disclosure, and identifying as disabled may have led to students feeling "invisible", having assumed that university staff would know about their disability once they started. It was identified that accessing "the curriculum" was a greater issue (p.94) than physical access for the students interviewed in this study; one visually impaired student identified the use of video as a barrier to learning for example. Breakdowns and difficulties in communication were also identified as major barriers to accessing tutorial and academic support for some of the students interviewed. However, these findings only reflect the individuals in the institution where data was collected. Despite using a single institution to carry out their research, Borland & James' findings in many ways reflect those of Tinklin & Hall (1998); both identified several and varied barriers to accessing HE.

A later study by Holloway (2001) responded to concerns raised by claims by Oliver and Hurst that the literature about disabled students in HE contained a lack of "lived experiences" (Hurst 1996, Oliver 1995). Like Borland & James (1999), this was a single institution study with 6 self-selecting participants, using semi-structured interviews. One of the key findings of Holloway's interviews was that being a disabled student in university resulted in a considerable increase in *time, cost, effort and stress* that affected the overall quality of the HE experience. Holloway identified difficulties in accessing support such as extra time in assessments and exams and gaining course material in accessible formats such as Braille or large font. This was in part due to differing perceptions of access to and provision of support by teaching staff. Support needs were not always met, and this was affected by students'

feelings of “invisibility” and was compounded by fear of disclosure and identity as a disabled person, reflecting the findings of Tinklin & Hall (1998) and Borland & James (1999). In a later study, Weedon & Riddell (2007) concurred, revealing struggles with time management and lack of independence in learning in their interviews with two disabled students.

One of the key differences in Holloway’s work was the focus on barriers *and* enablers. Although some positive support mechanisms were expressed in Borland & James’ study, they were less apparent. The positive enabling experiences identified by Holloway’s participants tended to be the opposite factors of those that caused barriers. The most positive learning experiences were gained by those who had adequate funding, appropriate equipment, flexible access to the library, specialist information and assistance, and appropriate access to academic support including exams. It was clear that staff played a very important role; where staff were aware of and could adapt to the individual needs of students, a positive experience was gained, supporting Tinklin & Hall (1998) and Borland & James (1999).

The largest study so far to investigate the experiences of disabled students in HE was a large ESRC funded grant from 2003-2008 by Mary Fuller and her team. The overall study set out to survey and interview both staff and students in 4 institutions within a case study design. The final research report was published in 2008, and included many key publications relevant to my project. Their investigation into the experiences of disabled students in HE was a seminal piece of work, focusing on *learning experience,* evaluating experiences of teaching, learning and assessment focussing on the identification of barriers to learning (Fuller et al 2004b). Although the focus was on barriers, the authors made it clear that students were asked to be critical and to provide examples of good practice too. In comparison to other similar

studies, Fuller's sample was large (593 students); the sample made up 10% of the total student population of the institutions involved.

A postal self-completion questionnaire consisting of both open and closed questions asked students about lectures, classes (including seminars, group work, labs and oral presentations) and off-campus learning such as field work. Of interest was the decision to use Arial size 12 font for the questionnaire; which may have reduced accessibility for visually impaired students. Whilst it may not have been possible to offer alternatives, the mode of distribution may have affected a participant's decision whether to complete or return the questionnaire. Although the response rate was not unusually low for the chosen method (29%, 173 students), a limitation of the postal questionnaire is the inability to identify reasons for non-completion, which can cause bias (Rindfuss et al 2015). 5% of those that responded to the questionnaire agreed to take part in a group interview. Key findings were the *"experiences of teaching"* for example, note-taking, access to learning materials and participation in class, and "*experiences of assessment"* such as types of assessment, time, and the ability to negotiate assessment methods.

The findings identified that good practice was identified in terms of staff communication, although staff willingness to support the students differed. Some staff were unaware of students' disabilities and necessary adjustments in class. Notably this was perceived to be proportionately worse in health and social sciences which is of interest to my research. In contrast, there were some reports of excellent teaching and support from staff with excellent attitudes towards their students. Technology and library services were also identified as specific barriers to learning, supported by Brandt (2011) in a later publication who specifically identified difficulties with IT and VLEs in university.

An important although small finding of Fuller's study was that the participants' disability affected their choice of degree course, and their choice of institution. Whilst this may suggest that the institution was supportive it may have biased the findings, particularly if students had chosen their institution based on the support offered. Despite this, 16% of the participants had altered their student registration status; from full to part time or had taken some time off. Although there were no figures given for non-disabled students, this figure appears high and may confirm that disabled students *do* have greater difficulties in university, due, in part to barriers to learning.

Goode (2007) used a case study design within a single institution to investigate the experiences of 20 disabled students in HE, focusing on barriers. The sample included students with sensory, physical and learning disabilities, and all were recruited via the Disability Policy Advisory Unit within the institution by letter. Data collection was carried out in a variety of ways; all participants were interviewed, and all but two participated in videotapes of typical days. Goode's (2007) results showed that students were *"managing their disability"* in many ways; through *identity, disclosure, extra-visibility, emotional work, and being proactive.*

Goode's findings echo those of Holloway (2001) in relation to the amount of time and energy expended making personal adjustments to university, however this paper clarified the extra requirements and responsibilities disabled students have in relation to teaching and learning; contributing to the *"emotional work"* of living with a disability at university. Later studies by Roberts et al (2009) and Magnus (2006) supported these findings, identifying the extra and effort time needed in the daily lives of disabled people just to function. Beauchamp-Pryor (2012 p.292) went further,

proposing that additional pressures experienced by disabled students in HE created a ‘double burden’.

Although difficulties with assessment were identified in the previous papers, Hanafin et al (2007) specifically investigated this using semi-structured interviews with students with a variety of physical, sensory and learning disabilities studying mainly arts, but also science and business courses in two Irish universities. Their main findings identified quite specific problems; getting handouts and lecture notes, assessment methods, using assistive technology and attitudes of staff. Hanafin argued that assessment was not considered *as learning*, possibly resulting in limited methods of assessment being used, with ‘alternatives’ (p.442) not considered fully for disabled students. In fact, Hanafin suggested that while limited assessment methods excluded disabled students, they may expose poor teaching and learning practices for all students. Addressing their own assertion, Hanafin et al (2007) suggested that the inclusive assessment methods would improve education for all, especially if assessment was used to *foster* learning rather than just to test it.

Vickerman & Blundell (2010) carried out a study into the experiences of disabled students in one institution. Some participants identified discomfort with disclosure and this appeared most striking in those choosing professional courses such as teaching. Although none of the students involved were physiotherapy students it raised concerns that disclosure may be more difficult for students entering training for a profession such as medicine (Miller et al 2009) or a professional course (Nolan et al 2015). Like Fuller et al (2004a & b) and Hanafin et al (2007) their findings showed that assessment needs were not met in terms of format or process, identifying restrictive practices that excluded disabled students. Lack of adaptive equipment and lack of modification in class by tutors caused barriers to student

learning and participation. It was also apparent that there was little discussion between students and their tutors about addressing barriers to learning, again causing disadvantage to the disabled students. This was identified in part due to a perception of staff anxiety in relation to awareness of disability policy and responsibilities to students. A key message from this study was the need for staff to communicate more effectively with their students and to respond proactively in line with the anticipatory duty and reasonable adjustment requirements of the Equality Act. This was reiterated by King et al (2010) who suggested that educators take ownership of their behaviours and habits in the classroom. Indeed, one of Vickerman and Blundells' conclusions was that the experience gained by disabled students remained largely due to attitudes and experiences of staff involved in HE rather than policy and provision. It was interesting that these conclusions and suggestions reflected those made by Tinklin & Hall (1998), Borland & James (1999), Holloway (2001) and Fuller et al (2004 a& b) suggesting that inclusion within HE hasn't come as far as it should have.

Madriaga et al (2010) undertook a systematic survey of disabled and non-disabled students regarding their experiences of HE in a single institution. A strength of this study was the decision to base data collection on a section of Fuller's previous large-scale ESRC funded study into the experiences of disabled students in HE, improving validity. The authors chose to contrast the views of disabled and non-disabled students to identify whether the issues raised by disabled students were the same or different to their non-disabled peers. Their study found that disabled students experienced problems with **time** required to carry out coursework and assignments, and experienced "bad practice in teaching" (p.652) which also impacted on having insufficient time to participate in class. Time and effort were also identified by Brandt

(2011), Holloway (2001) and Goode's research (2007), suggesting that this barrier has not been fully addressed in HE. Vickerman & Blundell (2010) also specifically identified that taking notes and inadequate access to handouts before or during class was a significant factor in learning, compounded by inappropriate formats. This was shown in a study of deaf students who also experienced similar issues (Lewin-Jones & Hodgson 2004), and by the participants in Kioko's study, detailed below. More recently, Redpath et al (2013) considered the experiences of disabled students in Northern Ireland, across a selection of institutions with a variety of participants, although none visually impaired. Their findings suggested that communication was imperative in ensuring inclusive support, and that experiences varied between students, often in relation to inconsistent or lack of support provided despite reasonable adjustments being in place. However, they did confirm that although each student was unique, there were generic recommendations that could be applied such as increasing staff awareness, early, open and honest communication with students, and staff development.

A recent publication by Kioko (2014) presented the findings from a small study at a single institution in the UK, and included two visually impaired students in their sample of four. The findings of this study supported many of the previous authors in terms of barriers, but specifically identified that in addition to learning and teaching experiences and exam support, the importance of good relationships and effective communication was great (p.109). The significance of this was clear, showing that learning was enabled where open and honest communication about a student's disability and support needs were carried out. Kioko concluded that 'personal effort' was imperative in supporting disabled students (p.114), however, academic staff felt inadequate when told about a student's needs, by email, as they felt that they lacked

specific knowledge about a specific disability (p.110). Brandt (2011) made similar observations; where students had direct contact with their educators there was better support. This demonstrates the importance of full disclosure, and the importance of communication between students and (academic) staff.

3.3.2 The experiences of disabled students in the health professions

Although the clear majority of research into the experiences of disabled students in HE has been generic, and has focused on groups of students in mainly single institutions, there are some publications that discuss experiences within professional education; all healthcare students are subject to fitness to practise regulations (Dearnley et al 2010, Walker et al 2013) and have differing registration requirements (Ryan 2011).

French (1988) published the experiences of disabled healthcare professionals, in employment or in training. She included seven physiotherapists within her study but did not identify which were students or graduates, which was limiting. Although this research is now dated, it is still important as she identified that within physiotherapy education, *negative attitudes and unhelpful behaviours* from physiotherapy teaching staff created barriers. Interestingly this was during the time when the RNIB School of Physiotherapy was open which offered specific training for visually impaired people, and where it might be assumed staff would have positive and helpful attitudes. However, this assumes that the student was at this school, which wasn't the only option for visually impaired students, even then.

Several papers in nursing have discussed the experiences of disabled students in HE (Ashcroft et al 2009, Ryan 2011) and have identified that attitudes to disabled students create barriers to learning. Ryan (2011) carried out a survey investigating the knowledge, attitudes and experiences of disabled students in three universities

offering nursing in Australia, identifying that nursing students faced negative attitudes from qualified staff. She suggested, like Gee (2012) that disabled students have already faced and surmounted barriers to even get *onto* a nursing degree course, showing resilience and perseverance. Gee (2012) also suggested that disabled nursing students may be ignored and excluded. Poor attitudes to disabled medical students were identified Miller et al (2009); students faced discrimination and were afraid of disclosing their disability, particularly on placements. This was a key piece of work at the time when changes were being made in medical training and Tomorrows Doctors (GMC 2009) was being published. Although disclosure may be a potential barrier for some students (Stanley et al 2007, Miller et al 2009, Nolan et al 2015), Wray et al (2013) incorporated specific study skills sessions into their undergraduate nursing curriculum which proved to be a positive step in encouraging disclosure to ensure early access to support, in readiness for practice based learning.

Despite the existence of some poor attitudes to disabled healthcare students, Ashcroft et al (2008) identified that collaboration was fundamental to reducing barriers faced by disabled students. She clearly stated that staff and students need to have open dialogue and have clear awareness of each other's responsibilities. Magnus & Tossebro (2014) have recently supported this, proposing that disabled students also need to take individual responsibility too, as where partnership exists, positive learning experiences can be developed. However, ironically, facing discrimination and poor attitudes may result in the strong character required to succeed as a disabled healthcare student (Dearnley et al 2010).

3.3.3 Practice based learning and fieldwork

Many disabled students learn in non-university settings on their courses. For example, Hall et al (2004) discussed the issues of exclusion and inclusion for students studying geography where fieldwork is an important component of the course, like in physiotherapy. They identified many barriers to fieldwork, suggesting how these barriers might be overcome. Although research into practice based learning in physiotherapy exists (Lindquist et al 2006, Laitinen-Vaananen 2007, Skøien et al 2009, Kell & Owen 2009, and Lindquist et al 2010), there is very little evidence of the experiences of disabled or visually impaired physiotherapy students; I therefore considered broadly the experiences of *disabled students in practice based learning*. Although their experiences are philosophically and professionally different, there is useful information and understanding to be gained from the literature.

Disclosure, attitudes and learning create barriers to practice based learning for disabled students. A report commissioned by the Disabled Rights Commission (Stanley et al 2007) and a recent paper by Nolan et al (2015) that included the experiences of physiotherapy students, identified that reluctance to disclose when entering professional courses remained, based on the specific practice environment, fear of being disadvantaged, or attitudes towards disabled students. This was found by Miller et al (2009) in her exploration of medical students who chose not to disclose due to fear of discrimination or negative attitudes towards them. Riddell (2007) discussed the issues faced by two students training to become teachers. Whilst the participants did not necessarily define themselves as being disabled, they both felt under pressure to disclose a disability to gain support in their institution and in their workplaces on placement.

Cunnah's research (2014) investigated disabled students' identity and work based learning placements within a longitudinal case study. This study was not in healthcare but did include visually impaired students and discussed how the participants felt on their placements. There were also issues of disclosure suggesting some discord with their identity as a disabled person, however, some students positively identified and offered 'unique' contributions to the placement (p. 219), offering insight into other people's impairments (p.220). A key finding was that practice based learning aided the transformation of identity as a disabled student, emphasising its importance.

In nursing, Ryan (2011 p.90) identified clear barriers in relation to 'hostile' attitudes from qualified staff. She suggested that this was due to staff ignorance of disability and being unaware of their responsibilities towards students within legislation, supporting the findings of Stanley et al (2007) and Beauchamp-Pryor (2012). She identified the importance of understanding when supporting a disabled student, and suggested that those who have experience of or who have worked alongside a disabled colleague tended to have more positive attitudes. Nolan et al (2015) also found that >30% of their participants faced negative attitudes on placement. However, it was also clear that establishing the appropriate amount of support for disabled students was challenging (Nolan et al 2015), and that diversity of professional practise made reasonable adjustments difficult to put into place (Rankin et al 2010).

Hibberd (2011) carried out a qualitative study that included physiotherapy educators and students, considering the experiences of support. She identified four specific, inter-dependent factors that enabled successful practice learning; close partnership working between student, practice educator and the university, a supportive

atmosphere, communication (about the disability e.g. disclosure and knowledge), and pre-placement preparation. This supported Rankin et al (2010) and Tee et al (2010) who identified that collaborative and individual support was key. Dearnley, Hargreaves & Walker (2010) agreed, stating that the impact of the student's impairment is fully considered in the individual preparation for placement for disabled students. In a study of non-disabled physiotherapy students preparing for their first practice based learning experience, Thomson et al (2014 p.69) made the same point suggesting that 'universities can ease the students' path' into the practice based setting by preparing them well. This was supported by Nolan et al (2015) who identified that disabled students themselves needed to be well prepared and organised for placement.

Although in relation to non-disabled nursing students, Newton (2009) clearly identified how important staff educators were in reducing barriers to learning. She also identified that supportive environments and clinical teachers ensured that learning was facilitated, supporting Kioko's (2014) findings in university settings. This supports Laitininen-Vaananen's observational study of physiotherapy practice education (2007) that identified the importance of encouraging participation in enabling practice learning. Indeed, King et al (2010) suggested that students look towards their educators as role models for inclusion, and that engaging in open communication with them was key. Unfortunately, Dearnley et al (2010) stated there remains a shortage of examples and relevant case studies to aid good practice, despite Tee & Cowen (2012) identifying that this can help support students and their educators.

3.3.4 The experiences of disabled students in HE; an international perspective

Although much of the research that is relevant to this study has been carried out and published in the UK, the existence of international work demonstrates that the issues that face disabled students are worldwide.

Magnus (2006) and Magnus & Tossebro (2014) explored the experiences of disabled students in Norway. Their research included visually impaired students and identified the key importance of "kindness" from staff to motivate and encourage disabled students, Magnus (2006) specifically showed that for disabled students to participate fully in HE, they needed to be highly organised, and that greater effort was needed in everyday life. This supports the findings of several authors in the UK, specifically Holloway (2001), Goode (2007), Roberts (2009), Gee (2012) and Beauchamp-Pryor (2012). A later study by Magnus & Tossebro (2014) suggested that negotiation between students and staff was imperative, supporting Goode (2007) and Hibberd (2011). However, they also showed that disabled students shouldered an individual burden to ensure that their reasonable adjustments were in place, needing to take individual responsibility for their support needs. Again, this reflects the findings of Goode (2007) in terms of the emotional effort of being disabled in HE, and the need to be proactive.

A doctoral thesis carried out in the USA investigated the experiences of post-secondary (HE) students in Hong Kong with nine visible disabilities; two of whom were visually impaired (Gilson 2008). Participant observation and interview methods were used in a similar way to Holloway (2001), although it was stated that the experiences of students in Hong Kong appear to have many more political and cultural ramifications than in the UK. This study therefore focused on cultural implications of disability, using the social model of disability to underpin the research.

This was an interesting choice as it was clear that the social model of disability was an unknown in Hong Kong and one of the aims of the study was to evaluate whether this model could “fit” the education system.

An earlier paper by the National Center for Study of Postsecondary Educational Supports (2000) provided a significant insight into the experiences of students in postsecondary education (HE) across the USA. This study used focus groups to collect rich and varied data from ten different universities, strengthening the data collected due to heterogeneity; much of the UK based research has centred on a single institution making the results less easy to generalise. Students with a variety of disabilities were purposively selected to take part, and the sample included visually impaired students. Unfortunately, one specific healthcare institution dropped out of the study. However, of specific relevance to my research (Study 1), the focus group questions were designed using information and feedback from research co-ordinators at each institution, potential participants and other interested parties such as family members. This process enhanced the study’s credibility. Several issues were identified across groups, demonstrating recurrence which signified common difficulties and significance for the participants. The most common finding was the inability to access ‘basic accommodations’ (or adjustments) (p.10); strikingly similar to the issues raised in UK based studies. The most obvious and relevant similarities in terms of barriers to access to HE were:

- Lack of partnership between support services, staff and students
- Administrative processes relating to disability are time-consuming and unwieldy
- Stigma of accommodations (adjustments)

- Reluctance to self-disclose
- Staff ignorance and inaccessible teaching styles
- Importance of support via assistive technology

Specific comments from visually impaired students centred on not wanting to be treated as exceptional for having functional ability; there was a misconception that disability meant lack of ability which wasn't true. Overall it was positive that the students did not perceive their disability to be a barrier to HE, more the perceptions of others and the adjustments required to enable equal access to educational methods. The research was large scale compared to the UK research base and considered experience and personal accounts which are essential in the evaluation of experience; the barriers identified reflected the barriers found in UK research without exception. However, an interesting element of positive support not fully investigated in the UK literature was the effect of the students' peers in their experiences of HE. Whilst staff support has been discussed in many studies in terms of both barriers and enablers to HE the impact of peer support has not been fully considered. This may be important to gain a fully informed view of the factors that *enable* participation and facilitate positive experiences of HE.

Papasotiriou & Windle (2012) carried out a single institution study in Australia considering the experiences of physically disabled students. Using semi-structured interviews with four participants (including one occupational therapy student) their findings showed low social interaction with peers, but that participants had positive identities and showed motivation, resilience and optimism. A similar study focused on the experiences of visually impaired and disabled students in HE in South Africa (Engelbrecht and deBeer 2014). Their findings showed that the main barriers faced

by their participants were in relation to physical access (to buildings) and library services, supporting Tinklin & Hall (1998) and Fuller et al (2004b) who identified that library access was a barrier for disabled students.

A study carried out in a single institution in Canada researched the lived experiences of students with invisible disabilities like dyslexia and mental health (Mullins & Preyde 2013). Their findings, like Papasotiriou & Windle (2012) showed that there were some social impacts of disability in HE, and barriers were caused by the nature of the disability in addition to time, and reading which caused frustration, and exhaustion.

Two authors, Reed & Curtis (2012) (Canada) and Claiborne et al (2011) (New Zealand) published articles relating specifically to visually impaired students which are discussed in the next section.

3.4 Access and inclusion for visually impaired students in HE

Being visually impaired has never precluded university education; the Network 1000 study (Douglas et al 2006) showed that visually impaired adults enjoyed a variety of educational experiences including entering HE. Richardson & Roy (2002), through a survey of visually impaired students in HE showed that visual impairment was not a significant factor in academic attainment. This has been supported by Richardson (2009) identifying that visually impaired students gain as good degrees as their peers. They are also as likely to gain good grades in modules they passed as their peers (Richardson 2015) although they were *less* likely to complete or pass modules, perhaps suggesting that there were still issues in accessing and receiving supportive education.

Owen-Hutchinson, Atkinson and Orpwood (1998) and Powell (2003) both published books that responded to the support needs and challenges in teaching visually impaired students. “Breaking down barriers” (Owen-Hutchinson et al 1998) identified that visually impaired people were unable to access further or higher education equally. This book was written to enable academic staff, with little or no experience, to teach and support visually impaired students more effectively, and was prepared as a resource and as a manual, offering highly practical advice. They produced a very accessible book with suggestions for enabling access to the curriculum, how to adapt the environment, the learning materials and incorporating technology. Furthermore, their vast experience in teaching and supporting physiotherapy students allowed them to offer useful advice about strategies to enable participation, and considered both formal teaching and assessment processes.

Stuart Powell’s later book considered access to and inclusion within HE (Powell 2003). Roy, one of the chapter authors, suggested that “learning is a collaboration between staff and students and to a large extent visually impaired students need to work out how best to proceed with HE” (2003 p.83). He also specifically suggested that agreeing adaptations with individual students was the future of inclusion, whilst agreeing and supporting the use of resources and strategies suggested by Owen-Hutchinson et al (1998). Furthermore, he identified the importance of ongoing staff commitment to ensure that students are enabled to maximise their use of support, equipment and strategies in HE, and that staff should not underestimate the impact of a visual impairment on learning. This suggests that assumptions may be made that students can survive with only the Disabled Students’ Allowance (DSA) or university support. Roy reiterated the importance of developing relationships between staff as students as “critical” (p.84), to ensure that planning ahead and

providing learning material prior to class would enable students to engage and participate, as the need for students to become more independent in learning was growing in HE. He identified time as a barrier for visually impaired students, which has been supported by research by Goode (2007), Mullins and Preyde (2013) and (Bishop and Rhind 2011) confirming that *even* if appropriate support is provided, the requirement for additional time is necessary to overcome barriers that visual impairment creates in learning.

3.3.5 The experiences of visually impaired students in HE

Although some of the research discussed included visually impaired participants, the findings or conclusions were generic to disabled students. As visually impaired students have specific and individual needs (Warren 1994), and the focus of this research is on visual impairment, it was essential to identify specific literature about the learning experiences of visually impaired students. Three key papers were identified in the literature review; Bishop & Rhind (2011), Reed & Curtis (2012) and Claiborne et al (2011).

Bishop & Rhind (2011) carried out a highly relevant study into the barriers and enablers for visually impaired students at a single HE institution. Their study was carried out via their disability service and all students who disclosed their VI were contacted (23); they received nine offers of participation. Participants had a range of VI were studying a variety of subjects (not including physiotherapy). Interviews were carried out on the telephone and produced data relating to a strong sense of identity, staff attitudes, travelling to and from campus and engagement with support. Four main themes emerged; students' attitude, institutional provision, external support and others' attitudes. Accessing and engaging with support was varied, ranging from reluctance to full engagement, particularly where the improvements in ease of study

were marked. They suggested that the student's own attitude was important, supporting Roy (2003) and that institutional support, particularly in relation to staff working with visually impaired students needed a 'bespoke' approach (p. 192).

Reed & Curtis (2012) explored the learning experiences of visually impaired students and academic staff in several institutions in Canada. Like Bishop & Rhind, they used telephone interviews, however their findings were more specific; the greatest barriers were in relation to timely access to teaching and learning materials in an adapted format, and resources such as assistive technology. They faced barriers such as eye strain and headaches due to the reliance on reading and identified that teaching relied on visual formats that were not always accessible. They also identified that staff forgot to make accommodations for them, impeding access to education further.

Claiborne et al (2011) carried out a study in one university in New Zealand that considered the perspectives of inclusion from four groups of stakeholders; one group consisted of four visually impaired students. Like Madriaga (2010) and Fuller et al (2008) they also considered students without disabilities. The group of visually impaired students identified that staff were generally supportive, but were not always reliable in provision of adjustments. However, it was clear from the findings that working collaboratively with the staff was important, and that building relationships with each student was crucial (p.519) supporting Kioko (2014). Despite this, participants had to 'fight for' (p.517) their entitlements, creating increased effort discussed by previous authors (Holloway 2001, Goode 2007, Beauchamp-Pryor 2012); accessing resources was an ongoing battle for the participants. It was clear that there were perceived differences in support needed and required, and Claiborne suggested that this may be because 'the voices of students…were not always intelligible…' (2011 p.524), suggesting that students need to ensure that their voices

are heard and that shared understanding of support would ensure inclusion and participation.

3.3.6 The experiences of disabled and visually impaired physiotherapy students

Although Atkinson & Owen-Hutchinson (2005) have identified that attitudes towards disabled physiotherapists are changing, Opie & Taylor (2008) have suggested there are still some concerns that disabled students can practice alongside their non-disabled colleagues. To try to identify exactly what constitutes the culture and practise of physiotherapy in relation to educating disabled students, Opie & Taylor (2008) sought to identify the essential functions that a physiotherapist must be able to carry out to practise. Their Delphi study explored the values, attitudes and beliefs of university Admissions Tutors towards disabled students entering physiotherapy education. Although disabled people have long been able to become physiotherapists, this research continued to suggest that there were differing attitudes to disabled students in relation to the core values and culture of the physiotherapy profession. It was interesting that attitudes towards those with a sensory disability were more positive than those with a physical disability that could affect their ability to touch and handle a patient. This may be due to the long history and exposure to visually impaired physiotherapists in practice. My publication (Frank et al 2014) explored the learning experiences of visually impaired physiotherapy students, and this is presented in Chapter 5 (Study 1).

This review has confirmed that little research evidence about the experiences of physiotherapy students in HE exists, with even less considering disabled or visually impaired students. In relation to student numbers in HE, physiotherapy students are not numerous. There are 35 institutions offering undergraduate (or pre-registration)

provision (CSP 2015) and numbers are closely monitored by the NHS as most courses are commissioned through the NHS. As visually impaired physiotherapy students are in a minority it is unsurprising that little specific research exists.

3.4 Justifying the research

These experiences of disabled students in HE show that a one size fits all strategy or approach cannot work, supporting Warren (1994) who suggested that all students had *individual and different* support needs, and later, Healey et al (2006) who confirmed that treating disabled students as a homogenous whole was problematic. One of Fuller et al's (2008) conclusions was the need to move away from single institution research, and to focus on single impairments. Although there is a significant amount of evidence for the education of children with visual impairment, and expertise exists within the University of Birmingham, it is of professional importance in physiotherapy to explore physiotherapy education from the perspectives of this minority group across university settings to ensure that best practise is being achieved, or can be developed. This would address the issues raised by Healey et al (2006) as not all disabled students experience problems in accessing teaching and learning, rather like their non-disabled peers. It may therefore be useful to consider specific instances of disability and education, such as in physiotherapy where the barriers and enablers relate not only to education but to the profession being learnt by these students. It is of course possible and likely that the same will be found; some students will experience barriers and some will not.

Despite there being evidence of the experiences of disabled students in HE, there is still little existence of specific discipline research (Fuller et al 2008), such as in physiotherapy. As there is no published evidence of the learning experiences of disabled physiotherapy students there is an ongoing possibility that barriers to

learning may continue through ignorance rather than through discrimination, although both are unacceptable under the Equality Act. Best practise in providing accessible teaching and learning in physiotherapy education has consequently yet to be established. However, if the experiences of visually impaired students who remain in the minority are not explored then accessible inclusive education cannot be ensured. The only way to find out if, how and why this is happening is to investigate the experiences of students *currently* studying physiotherapy programmes *in* HE (Barnes 2007) and to ascertain *how* they learn to become physiotherapists.

3.5 Research questions

Chapter 1.3 identified the aims of this research project, which were underpinned by the research context and this literature review. The results of this review ensured that the final research questions for the exploration into the learning experiences of visually impaired physiotherapy students were clear, and appropriate:

1. How do visually impaired students learn the knowledge, skills and practices of physiotherapy?
2. What factors do visually impaired physiotherapy students experience that create barriers in learning?
3. What are the individual strategies, factors or behaviours that enable learning physiotherapy for visually impaired student physiotherapists?

3.5.1 Objectives

To ensure that the research questions and the project aims could be fulfilled, a series of objectives were identified;

1. To identify the factors that create barriers and enablers in learning for visually impaired physiotherapy students
2. To identify the adaptive behaviours used by visually impaired physiotherapy students to enable learning
3. To identify best-practice in teaching physiotherapy for visually impaired students
4. To obtain external validation of the findings from academic staff in UK Physiotherapy courses

3.6 Conclusion

This review identified considerable literature around the experiences of disabled, including visually impaired students in HE, and limited evidence about disabled healthcare students in university and practice based settings. There was evidence of many factors that created *barriers* for disabled students, and to a lesser extent, the factors that *enabled* learning, but no specific research literature exploring the learning experiences of visually impaired physiotherapy students. The literature review has therefore provided a justification for this research project and the need to carry out research with specific groups across universities such as visually impaired physiotherapy students (Fuller et al 2004a, Healey et al 2006, Brace 2007, Fuller et al 2008). The next chapter considers how this research project was designed, planned, and carried out.

CHAPTER 4: METHODOLOGY

4.1 Introduction

This chapter considers the broad methodological approaches and methods used to carry out this research project considering philosophical, theoretical and design issues, to ensure that the research questions posed in Chapter 3.5 could be answered. The chapter presents an overall consideration of research design, and the case study approach which was used, and details the ethical processes used to access participants and collect data.

4.2 Overall approach to the research design

The general principles underpinning research design require that strategies and methods chosen must be appropriate to *answer the questions being asked* (Robson 2002 p.79, Denzin & Lincoln 2008 p.34, Thomas 2011), and that research questions are relevant to the phenomenon under investigation (Robson 2002 p. 59). The key issue in relation to design is that it must be "fit for purpose" (Cohen et al 2007); it must do what it sets out to do. This research focused on exploring the learning experiences of visually impaired physiotherapy students, considering barriers and enablers to learning the skills, knowledge, practices and behaviours which underpin physiotherapy practise (CSP 2011, 2012).

Bryman (2008) states that the ontological and epistemological perspectives of the researcher are key when deciding which type of research design to use. My own belief is that social reality is "constructed" by those living in it, through interaction with each other and their environment (Bryman 2008). The perspectives of those within their 'world' are influenced by their own experiences (Kvale 2007), suggesting that social reality is subjective, and that differing beliefs and multiple realities can exist

(Cohen et al 2007, Creswell 2013). The acceptance that the world can be viewed from many viewpoints guided me to the qualitative paradigm where exploration of students who were *experiencing* learning could generate or construct meaning and understating about their experiences.

Hyett et al (2014) suggest that case study design can be approached from the social constructivist paradigm favoured by Merriam (2009) or through a post-positivistic lens favoured by Yin (2009) and Flyvbjerg (2011). This project investigated the learning experiences of visually impaired physiotherapy students, which, by virtue of their difference, was likely to demonstrate the existence of multiple realities of the same phenomenon. My qualitative case study research was therefore underpinned with a *constructivist* perspective (Merriam 2009).

4.3 Qualitative research

Qualitative researchers are committed to discovery using different methods of understanding (Speziale & Carpenter 2006 p21). Qualitative research is therefore *inductive;* it enables the generation or *construction* of theory rather than seeking to test it (Bryman 2008, Cohen et al 2007). Qualitative designs require some basic assumptions to be met (Robson 2002);

1. the research is *evolving*;
2. there is a presence of *multiple realities*;
3. there is a focus on *participants' views*;
4. the researcher is seeking to gain *understanding* of an issue.

This research evolved through an exploratory study (Study 1) which facilitated the development of Study 2 through participant involvement. As the project sought to investigate the views from several students at different UK universities, there was clear potential for students to have differing experiences, and therefore multiple

realities of the same phenomena. As no previous research into the learning experiences of visually impaired physiotherapy students existed there was an opportunity for participants to “tell their story”. This research therefore met all of Robson’s (2002) assumptions, and justified qualitative inquiry as a suitable approach.

4.4 Research design

Planning a research project outlines the approach, the design frame, methods and analysis within the research (Thomas 2011), demonstrating how the research questions are going to be achieved through the implementation of research methods. To choose the most appropriate design for a research project, Creswell (2009) suggests that three things must be considered;

1. *The research problem*. The literature review identified that there was little evidence or understanding of the experiences of visually impaired physiotherapy students, confirming a gap in the literature.
2. *The experience of the researcher*. As a physiotherapist and academic, I have observed the education of visually impaired student physiotherapists and am aware that experiences of learning are affected by barriers and enablers in university and practice. However, I acknowledge that personal involvement and interest in the research has implications for the design.
3. *The audience*. Simmons (2009) suggests that research must be useful to practitioners. Academic and practice educators, and current and future physiotherapy students may be interested in the experiences of those currently in education. It is hoped that the wider educational community will be interested from the perspective of inclusive and accessible education for disabled and visually impaired students.

Having fully considered the three components above, in conjunction with the overall approach, a case study design was chosen.

4.5 Case study design

Although Hyett et al (2014) recently identified the many difficulties in defining case study due to the flexibility of the design, Thomas (2011 p.170) makes it clear that a case study is "*a container, a "wrapper"...for a set of circumstances*." In this case study, *the learning experiences of visually impaired physiotherapy students* are the set of circumstances that are being explored, the 'something of interest', in a particular context; the 'case' under exploration (Thomas 2011, Yin 2009).

Within the case under exploration, *the learning experiences of visually impaired physiotherapy students,* the participants were "knowledgeable people" (Cohen et al 2007 p.115) selected purposively to offer "first-hand experience" of the case under exploration (Speziale & Carpenter 2007 p29). Cohen et al (2007) suggest that participants can be considered "critical cases" where they demonstrate the issue or set of characteristics required, are unique (Simmons 2009, Thomas 2011) or where they enable representative sampling (Stake 2011p.450). In my research, the "critical cases" are the visually impaired physiotherapy students (see section 4.7.1). When considered collectively, these individual cases, who are 'bounded' by their particular uniqueness (Stake 2005, Thomas 2011) are considered to make up a multiple case study (Stake 2005, Thomas 2011), "to provide in-depth understanding of a specific topic to generate knowledge to inform professional practice" (Simmons 2009 p.21).

Simmons (2009) also indicates that case study research explores, in-depth, the complexity and uniqueness in a real-life context such as in physiotherapy education, involving me as a researcher and educator. It is therefore unsurprising that case

study design is often used when the researcher has a sustained interest in, or is intimately connected with, the phenomenon in question (Thomas 2011p.3) as I was.

4.6 Design – the components of the case study

To answer the research questions within the case study design frame, three separate studies were planned; the first two consider the experiences of learning from the student perspective, and the third study considers the perspectives of the university based learning experiences of academic staff accessed via course leaders. Each study fits within the overall case study design to build a picture about the case; the learning experiences of visually impaired physiotherapy students;

Study 1: **Exploratory Study including Pilot Testing**

Three participants known to myself were interviewed, and provided feedback and evaluation of the interview process. The data is presented in Chapter 5 and in publication (Frank et al 2014).

Study 2: **National study** with four participants purposively accessed from the whole population of visually impaired students;

Round 1 – Face to face interviews focusing on *university-based experiences of learning and teaching.* The data from Round 1 is presented in Chapter 6.

Round 2 – Follow-up interviews focusing on *practice based learning experiences* (placements in physiotherapy environments). This data is presented in Chapter 7.

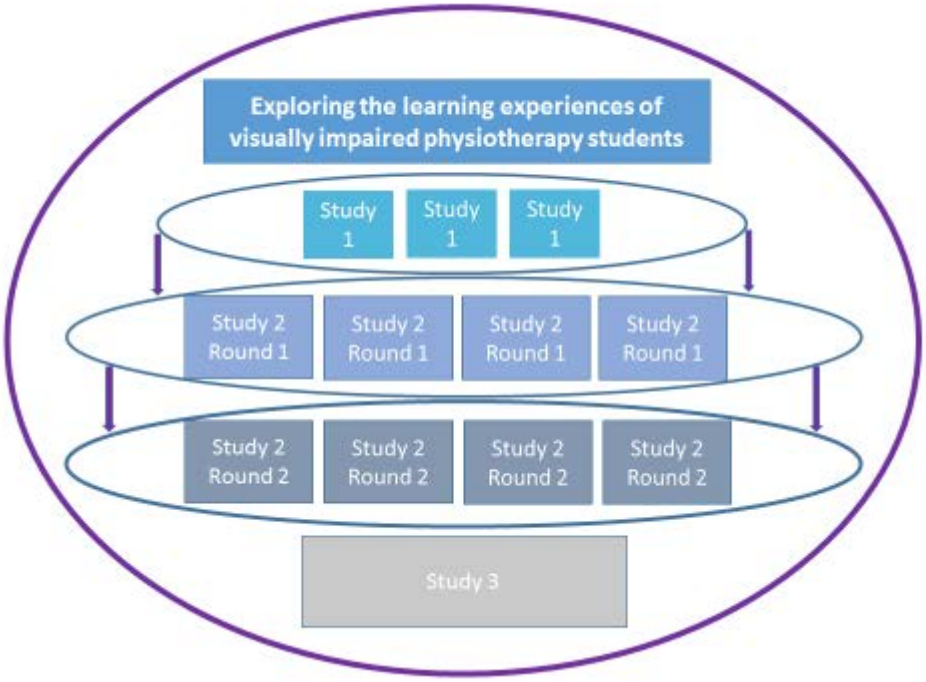
Study 3: **Questionnaire study**

The final study is described in Chapter 8; the physiotherapy course leaders who provided access to the participants were

asked to consider and evaluate the findings from Round 1 to triangulate the data.

Each component of the case study design has sequentially affected the subsequent study; it has emerged to some degree. This is illustrated in the Figure 2; the component parts of the case study are illustrated, including the multiple participant cases in Studies 1 and 2, and the third questionnaire study using academic staff respondents;

Figure 2: *The component parts of the overall case study illustrating the participants and the sequential and emergent nature of the design*



The methods and processes for Study 3 are fully considered in Chapter 8 for clarity, as they are methodologically different to those in Studies 1 and 2.

4.7 Ethical considerations

Creswell (2009) suggests that ethical research is high quality research; it respects the rights of the participants, must honour the research sites where data is collected

and respects the audience by ensuring that research is always reported fully. Gorman (2007) agrees, suggesting that ethical research can enhance knowledge and improve practise across a profession. This research was carried out within these premises to inform and enhance educational practices in physiotherapy education. The principles of ethics as they applied to this specific research were identified, interpreted and understood (Creswell 2009); the research was planned with the aim of doing no harm, and to have measurable benefits to the participants and the physiotherapy and HE community.

4.7.1 The student participants (Study 1 and 2)

The population of physiotherapy student participants was very small. Section 2.5.4 shows that less than 10% of all disclosed disabled physiotherapy students in the UK were visually impaired when this research began. The inclusion criteria for each "case" were:

> *A student physiotherapist registered on a recognised Physiotherapy degree course at a UK Higher Education institution who had disclosed a visual impairment.*

Due to data protection rules, and to ensure confidentiality and anonymity, I was unable to identify specific students that would meet my inclusion criteria so an ethically appropriate and confidential approach to the participants was needed (BERA 2011). Cohen et al (2007 p.109) recognises the importance of gaining access via "gatekeepers" to ensure that access is permitted; for this research, these were course leaders of all UK physiotherapy courses. This process was used by Tinklin & Hall (1998), Goode (2007) and Bishop & Rhind (2011) all used similar processes to engage participants. This is fully documented in section 4.8.

4.7.2 Gaining informed consent from the student participants (Studies 1 &2)

To ensure that ethical processes were followed, participation information sheets (Appendix 6) and consent forms (Appendix 7) were developed. An outline used within the School of Health Sciences, University of Birmingham was used. It included all components for informed consent and met the requirements for my ethical approval within the School of Education, meeting the British Educational Research Association (BERA 2011) guidelines for good research.

Informed consent was planned in two stages, during the first email communication with the participant, and then prior to data collection. Participants were made aware that they could withdraw from the study at any time with no adverse effect and that their data would be kept confidentially and stored in a password controlled computer and portable hard drive that only I had access to. Following analysis of data and completion of the project, participants were assured that the raw data and transcripts would be destroyed. If participants chose to withdraw before the completion of the research, then their data would also be destroyed.

4.7.3 The academic respondents (Study 3)

Section 4.8 identifies that gate-keepers facilitated access to the student participants for Studies 1 and 2. These gate-keepers (course leaders of physiotherapy courses in the UK) became the participants for Study 3.

4.7.4 Maintaining anonymity

Kelly (2009) suggests, and BERA (2011) agree that ensuring anonymity may not always be possible. Due to the small population from which the student participants were accessed and their potentially unique position in their institution it was *possible* that participants could be identified in the research. To protect the participants further, they were assured that the *institution* would be kept confidential in all data

collection and transcription, analysis and interpretation. Participants were asked how they would prefer to be referred to in any data transcription and were informed that they would be given a number in the final thesis or any publications.

The academic participants were assured the same confidence; their involvement in the study was kept confidential, and their responses in Study 3 were accessed and presented anonymously, in relation to person and institution.

4.7.5 Being an ethically aware researcher

Research into the practises within my own profession and educational paradigm raised several additional ethical dilemmas (Norton 2007). It was essential that I had sufficient insight and awareness of my own 'position' by being reflexive (Finlay & Gough 2003, BERA 2011 p.5). Sikes (2004) suggests that an ethically aware researcher will be sensitive to the differences between the researcher and the researched. Especially in Studies 1 & 2, I was a physiotherapist, and an academic who had been involved in the support and education of visually impaired students. This raised issues of *perceived* knowledge of visual impairment due to my own limited experience, and possible influence and authority due to my role as a lecturer in physiotherapy, providing potential issues of social power that could affect what the student participants would tell me (French 2001, BERA 2011 p.5). Participants must feel able to participate fully in the research process and be able to withdraw without providing a reason (Gorman 2007) so I had to consider whether a student may feel obliged to respond favourably (and potentially less honestly) to me knowing that I was a physiotherapy lecturer (Robson 2002). To address this, and in line with BERA Guidelines (2011 no. 14) I was open and honest with the participants about my roles and my experience of teaching and supporting visually impaired and disabled students in my work. The aims of the research were made explicit and transparent to

each participant in writing and verbally before they consented to participate, promoting honesty in participation. It was very important to me that the research was carried out with the participants fully participating, collaboratively in the research (Duckett & Pratt 2001).

I also took every step to ensure that during data collection and analysis, my own opinions and views were not imposed on the participants, and did not dominate the data provided in collection, analysis or interpretation. This ensured that meaning from the data could emerge rather than having meaning imposed *on* it, which may not have reflected the true participant accounts. Any of these issues could have influenced or jeopardised the data collection and analysis processes and were carefully considered to protect the participants and to ensure that the data collected was trustworthy.

In Study 3, I was open and honest about my position and my experiences when requesting data from my academic colleagues in other institutions.

4.7.6 Ethical approval

Ethical approval was sought and achieved in April 2011 from the School of Education, University of Birmingham. The rights and responsibilities of all parties in this study were acknowledged and respected (Creswell 2009, Hammersley & Atkinson 1995, BERA 2011) and ethical principles of respect for persons and justice upheld (French 2001); all participants had their dignity as individuals respected by being treated fairly, adhering to ethical principles and guidance (BERA 2011).

4.8 Accessing student participants for Studies 1 & 2

A list of Universities that offered physiotherapy degrees was gained from the CSP website and through UCAS (Universities and Colleges Admissions Service). To

access the participants ethically and appropriately, the course leaders at every HE institution in the UK that offered a pre-registration course in Physiotherapy (n=35) were contacted by email and asked to act as a gate-keeper (Appendices 11 & 12).

The course leaders were asked to identify suitable participants on their courses who met the inclusion criteria (see section 4.6.1) and were asked to forward, by email, a participant information sheet (Appendix 6) and my contact details, which were included in an attached file. This ensured participant confidentiality and the ability to make a reasoned and informed decision as to whether to participate. This is accepted good practice in research (Brown 2000, BERA 2011, ESRC 2005) whereby the possible benefits and risks of taking part and the possibility of being identified within the research are identified prior to the participant consenting.

4.8.1 Recruiting the student participants

Potential participants were encouraged to contact myself if they had any questions about participating and could simply choose not to reply to the gate-keeper if they didn't want to participate. Follow-up emails to the gate-keepers were sent after one month. Interested participants then contacted me directly. At initial contact, participants were asked if they had read the participant information sheet, and whether they had any questions about their participation. They were then provided with the consent form (Appendix 7) in their preferred accessible format and all were asked again if they had any concerns or questions about their participation. Once preliminary consent, either verbally or by email, had been given, arrangements were made to meet in a location and at a time of the participant's choice. Although it was important to maintain the naturalistic qualities of the "field", offering choice enabled reciprocity in decision making which facilitates successful data collection (Speziale &

Carpenter 2007). The course leaders were not informed whether their student had consented to participate in the project.

4.8.2 Participant numbers for Studies 1 & 2

- For Study 1, three participants consented to take part. This study is presented in Chapter 5.
- For Study 2, four participants consented to take part. Study 2 is presented in two parts in Chapters 6 and 7.

4.9 Methods

Case study is an in-depth exploration of a little-known phenomenon typified by the use of **one or more methods of data collection** (Thomas 2011 p.23, Hyett et al 2014). Semi-structured interviews were used in Studies 1 & 2, and an online questionnaire was used in Study 3.

This chapter presents the methods used in Studies 1 and 2; the methods used in Study 3 (the online questionnaire) are considered and presented fully in Chapter 8.

4.9.1 Choosing data collection methods – Studies 1 & 2

One of the purposes of qualitative research is to improve understanding by *asking* those to which an issue affects (French 2001). Asking questions in qualitative research can include methods such as interviews, focus groups or questionnaires; most qualitative studies use interviews to collect data, partially and in some cases, exclusively (Merriam 2009). Focus groups were not practical due to the geographical distance between a potentially small number of participants, and questionnaires, whilst easy to distribute and collect, would not have allowed answers to be explored to gain depth or clarity even with open-ended questions (Keats 2000). Postal questionnaires may not have been accessible for visually impaired participants; this

was an issue identified in Fuller et al's study which may have affected response (2004a & b). Interviews were decided upon as the most appropriate method of data collection for Studies 1 & 2. As there was no current evidence of the experiences of visually impaired student physiotherapists, interviews also offered the participants the opportunity to tell their own stories, in their own words (Bryman 2008).

4.9.2 Using interviews

Through conversational interaction involving careful questioning and listening, interviews can obtain "thoroughly tested knowledge" (Kvale 2007 p.7). They also enable participants to discuss "their interpretations of the world in which they live and to express how they regard situations from their own point of view" (Cohen et al 2007 p.349). By purposively selecting 'information-rich cases' that were central to the purpose of the research, the potential for the greatest amount of data and understanding was optimised (French 2001 p.96).

Interviews have been used in several studies investigating the experiences of disabled students in HE (Tinklin & Hall 1998, Borland & James 1999, Fuller et al 2004a, Goode 2007). Interviews can be *structured* (like a questionnaire with little or no flexibility in how questions are asked), *semi-structured* (where there is an outline to follow but flexibility allows for deviation away from the schedule) or *un-structured* (where the interview is free-flowing with no structure imposed by the researcher) (Cohen et al 2007, Creswell 2009, Bryman 2008). The semi-structured interview is popular and was used by Tinklin & Hall (1998) and Fuller et al (2004a), developed from exploratory questionnaires, and Lindquist (Richardson et al 2002, Lindquist et al 2004, Lindquist et al 2006) used semi-structured interviews in her preliminary study into the learning experiences of physiotherapy students.

Semi-structured interviews were used in this research as there was a clear focus on the issues under exploration (Bryman 2008 p.315). The use of a semi-structured interview ensured that all participants were asked about the same content within each interview. Although a structured interview could have facilitated cross-case comparison a less structured approach may have limited reliability, the ability of more than one researcher to achieve the same results with the same tool (Bryman 2008 p.315). However, the pilot process within Study 1 (described in Chapter 5) assessed and confirmed the interview schedule's ability to answer the research questions. Semi-structured interviews were therefore used to explore the learning experiences of visually impaired student physiotherapists.

4.9.3 Designing the semi-structured interview schedule

When preparing the interview schedule Bryman (2008) suggests that the researcher should put themselves in the position of the participant to ensure that the questions are relevant, contextual and answerable. However, this was difficult as I am a sighted qualified physiotherapist, making me contextually different to the participants. My experience and background allowed me to offer insight from the educational perspective in terms of understanding the curriculum and the possible methods of teaching, learning and support that may exist in a HEI, but it was not possible for me to provide a perspective of being visually impaired in relation to the factors that created barriers or enabled learning.

To ensure that the interview would collect appropriate and useful data that would answer the research questions, it was important to identify *what* to ask and *how best* to ask it. The content of an interview schedule was developed, like Tinklin & Hall (1998) and Fuller et al (2004a), by underpinning the schedule with theory from the literature, and from professional publications (Appendices 1 - 4). The initial interview

schedule that was developed for Study 1 became the basis for the interview schedules used in Study 2, following pilot testing, evaluation and improvement. This process is described fully in Chapters 5 and 6.

4.9.4 Using theory within the interview schedule design

Kvale (2007) suggests that the interview schedule is created in relation to the research questions using *concept-driven themes* to guide questioning, driven by literature, theory or experience. Thomas (2011 p.163) agrees, suggesting that an interview is structured using themes, not specific questions. The literature review in Chapter 3 informed the design of the semi-structured interview. In the absence of physiotherapy specific research, the interview schedule was designed using themes identified from the experiences of disabled students. The review of the literature suggested that learning in part appeared to be affected by the *subject and context* (Richardson et al 2002, Lindquist et al 2006, Hall et al 2004), *the individual* (Tinklin & Hall 1998, Fuller et al 2004, Holloway 2001, Bishop & Rhind 2011), and *the environment* (Tinklin & Hall 1998, Fuller et al 2004, 2004a, Bishop & Rhind 2011) so these concepts were included in the interview. To ensure that the interview schedule would allow the research questions to be met, the evidence and policy below was also considered. Appendices 1-3 show how these themes impacted on the schedule:

1. The ICF (WHO 2001) which in relation to environmental factors to participation used the terms “barriers” and “enablers”
2. The Code of Members’ Professional Values and Behaviour (CSP 2011)
3. Learning and Development Principles (CSP 2010)
4. “Into Physiotherapy; Welcoming and supporting Disabled Students” (Owen-Hutchinson and Atkinson 2010)

4.9.5 Designing the questions

As interviews are used predominantly to gain in-depth responses and explanation through progressive clarification (Gillham 2000) it was important to ensure that questioning allowed this. Both Cohen et al (2007) and Gillham (2000) suggest that the order of questions is important, with straight forward and more factual questions being used first. This suggested the initial use of closed questions, with limited responses to provide factual information about the respondent, putting them at ease in the interview. However, as the interview needed to gain depth of insight into the personal experience of learning, more open questions ensured free response and depth of answer (Cohen et al 2007, Bryman 2008, Creswell 2009). As the questions related to attitude and opinion, short questions were appropriate and ensured that the focus of the question was clear to the respondent (Cohen et al 2007, Bryman 2001). The draft interview schedule for Study 1 can be found in Appendix 4.

To ensure that the interview schedule was effective, it was thoroughly pilot tested within Study 1, and evaluated and amended to enable it to answer the questions relating to university based learning in Study 2 (Round 1) and practice based learning in Study 2 (Round 2). These processes are described in Chapters 6 & 7.

4.10 Data Collection Studies 1 and 2

Studies 1 & 2 were carried out using face-to-face methods to collect data, but in Study 2 (Round 2), participants were given the option to have a telephone interview. Interviews were carried out at a time (and location) of the participant's choice to ensure their comfort (Speziale & Carpenter 2007). Informed consent was gained and interviews commenced, recorded using a digital voice recorder. Participants were informed that they could stop the interview at any point. Raw data from the interviews was transcribed verbatim, into a working 'interpretive' document using

Microsoft Word (Denzin & Lincoln 2008). Pseudonyms (e.g. P2) protected the identity of the participants within the text, maintaining anonymity as stated in the ethical approval document (Gibbs 2007). Each document was named with the pseudonym and was saved on a password controlled computer and portable hard drive that was only accessible by myself. Each document was then uploaded to NVivo (QSR 2009) to aid the analysis process.

4.10.1 Data analysis

Merriam (2009) suggests that *all* basic qualitative research is *interpretive,* and Thomas (2011 p.171) confirms that "interpretive enquiry is made for case study". In order to interpret data, it must first be analysed. As understanding of the case is arrived at through analysis of the experiences of those involved (Flyvbjerg 2006); the participants' stories provided a "rich picture" that allowed insights to be gained (Thomas 2011p.23). Kvale (2007) suggests that the actual interview itself is the first stage of analysis as participants are describing their experiences to the interviewer who is, by listening, already beginning to make sense of what is being said. The transcription stage also facilitated the early process of analysis as I became immersed in the data (Kvale 2007). Although this process was time consuming, it was essential (Merriam 2009).

4.10.2 Using theory within the analysis

The theoretical underpinning discussed in section 2.4 identifies that the research focused on gaining insight into the participants' experiences of university and practice based learning, using the terms barriers and enablers from the ICF (WHO 2010). The open nature of the semi-structured interviews enabled participants to identify the factors that caused barriers, and those that facilitated learning. This ensured that the data were analysed through a social participation and constructivist

lens (Merriam 2009, Hyett et al 2014), considering the breadth of factors that affected participation and influenced learning in physiotherapy. In view of the literature about learning experiences in HE, it was expected that several factors would be identified that influenced the experiences that the participants had, positively (as enablers) and negatively (as barriers).

4.10.3 Coding the interview data

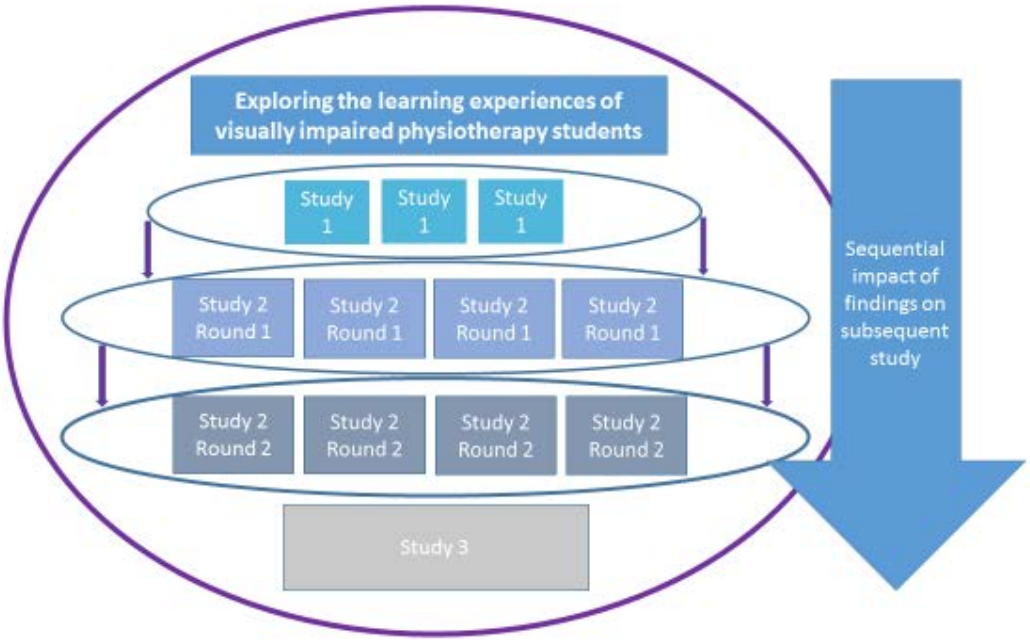
Analysis of text in qualitative enquiry requires organisation of the data by "coding", the process of "attaching meaning to words or sentences to allow later identification in a document" (Kvale 2007 p.105). Creswell (2013) identifies that although there are several approaches to analysis, they all feature similarities in process; re-reading the data to identify codes that enable the data to be classified into larger themes that can then be interpreted and discussed.

The transcriptions were analysed and coded using NVivo, with themes from the data (Denzin & Lincoln 2008); the codes were then refined, developed and related using a method of *constant comparison* (Strauss & Corbin 1990). Thomas (2011 p.171) clarifies this by stating that the repeated reading and consideration of the data is the "constant" part of the process, while the "comparative" part refers to the comparison of codes and themes as they emerge from the data. This process ensured that the data was being dealt with consistently, and comprehensively (Gibbs 2007).

Coding can be concept-driven or deductive where themes are derived from the literature, previous studies and topics that were included in the interview, or may be data-driven or inductive, where new themes emerge from the data through analysis (Gibbs 2007). Data-driven coding is based on grounded theory (Glaser and Strauss 1967) which presumes that predispositions, prejudices and assumptions are set aside when analysing what has been said. This required an open mind to the content

and possible themes from the data. This was a difficult process, as my reasons for carrying out this research project were due to my own knowledge and experience of teaching and supporting the types of students typified by the participants. However, Gibbs (2007) argues that no researcher can have a completely open mind, as there *will* be expectations from the data; this supported my decision to use both deductive (concept-driven) and inductive (data-driven) methods to ensure that all aspects of data had been analysed and that expected and new codes or themes relating to the specific participant group could be identified (Fereday & Muir-Cochrane 2006). For example, the themes that were identified from Study 1, the Exploratory Study, were considered in the analysis for Study 2, in Round 1 which considered the university based learning experiences of 4 participants. The analysis and findings of all participants' data is found in the respective Chapters 5, 6 and 7. Figure 3 shows how each study's findings influenced the questions of the next;

Figure 3: *The sequential impact of the findings from each study on the next within the overall case study*



4.10.4 Ensuring quality of the data analysis

As far as is possible, the quality of qualitative research must be ensured by steps taken in the design and analysis stages of a study (Kvale 2007). Although the terms validity and reliability are often associated with more positivistic methods of research, their principles can be applied to qualitative research such as this. Validity refers to "truth, correctness and strength of argument" (Kvale 2007 p.122), considering whether credible conclusions can be drawn from the data, and whether the evidence bears the weight of interpretation (Sapsford & Jupp 1996). To support this, a copy of the full interview transcription was sent to each participant so they could verify that what had been transcribed was what had been discussed. This allowed the participants to identify anything that might have been misheard or misinterpreted by myself during the interview or transcription process (Gibbs 2007, Merriam 2009). There were no inaccuracies identified by the participants so the transcripts were considered to be true representations of the interviews. The following is an extract from an interview with one of the participants:

> *I: What I wanted to do was first of all just check with you that the interview transcript was accurate? I know you said there was quite a lot of waffle, from both of us, but was it all accurate?*
>
> *IV: Er yes, it looks quite accurate, and there's quite a lot being told – especially about the past.*
>
> *I: Yeah. But that's fine – that gives me context. I just wanted to make sure that I'd typed everything up as you said it and that I hadn't written anything down that was incorrect. So as long as you're happy with that then I can use it anonymously".*

Reliability pertains to “consistency and trustworthiness of research findings” (Kvale 2007 p.122). In relation to an interview this refers to whether a participant would react or respond differently to a different interviewer using the same questions, and in relation to transcription and analysis where variations may occur depending on who is transcribing and who is interpreting the data. The pilot testing within Study 1 showed that participants understood what was being asked in similar ways. As the interviews were analysed by myself, reliability was enhanced through discussion with a doctoral supervisor, an academic peer and a fellow student to act as critical friends, ensuring rigour in the analysis process (Gibbs 2007, Cohen et al 2007).

4.11 Generalisability – a disadvantage of case study design?

A suggested limitation of case study is the difficulty in generalising findings (Cohen et al 2007, Flyvbjerg 2006, Robson 2002). Generalisability refers to “the extent to which the findings of the enquiry are more generally applicable outside the specifics of the situation studied” (Robson 2002 p.93). Thomas (2011) suggests that in social sciences there are differences in relation to what can be interpreted or inferred from case studies that focus on a specific, bounded phenomenon. My primary concern was to represent the views of the student participants I interviewed. Nevertheless, as a large *proportion* of the total population of visually impaired physiotherapy students were accessed, the findings would be *representative* of students’ learning experiences in physiotherapy education (Stake 2005); the analysis of multiple cases would provide sufficient understanding of the learning experiences of visually impaired physiotherapy students from “a specific instance that is designed to illustrate a more general principle” (Cohen et al 2007).

Thomas (2011 p.211) argued that the interpretation of the case study owes its legitimacy to the *power* of exemplary knowledge that is gained, rather than its

generalisability. The purpose of this case study project was to do just that; to investigate and explore the learning experiences of visually impaired physiotherapy students, to report the factors that created barriers for the participants, how these were addressed, and to learn, through their own stories, what individual strategies, factors or behaviours were beneficial in enabling learning in the university and practice setting. There is great potential to be able to “abduct” or provide explanations (Thomas 2011, p.212) from these findings and to make conclusions about how these participants learn, which may inform theory of learning and teaching for students beyond the participants. This will be returned to in Chapter 9.

4.12 Conclusion

This chapter has considered and justified the design and methods used in this research project, reflecting on the use of qualitative methods to gain experiences of learning from visually impaired physiotherapy students within a case study. This approach enabled the exploration of a specific and unique ‘bounded’ group of participants (Stake 2005, Thomas 2011), using semi-structured interviews about their experiences of university and practice based learning in physiotherapy education. An ethical approach to accessing the UK population of participants has been presented and the process of data collection and analysis described.

CHAPTER 5: STUDY 1 - THE EXPLORATORY STUDY

5.1 Introduction

This chapter describes the first study within the research project which was commenced in autumn 2011. During the time of data collection for this study, I was employed as a lecturer in physiotherapy at a large university, teaching and supporting three visually impaired physiotherapy students who agreed to participate, pilot test and provide feedback and evaluation on the process. This chapter presents the justification for the exploratory study, the specific consideration of factors that create barriers and enablers in learning (which focused on university learning), and the resultant outcome of the pilot testing on the refinement of the semi-structured interview and the broadening of the research to consider practice based learning. The findings and discussion from this chapter were published in the British Journal of Visual Impairment (Frank et al 2014) which was referenced in the recent WCPT (2016) briefing paper about access to physiotherapy education and practise for disabled people.

5.2 Using an exploratory study within the case study

As my literature review identified a lack of evidence about the learning experiences of visually impaired physiotherapy students, an exploratory approach was chosen as the starting point for the research project. This enabled me to ensure that my approach was participatory, and included and was appropriate for visually impaired students. Thomas (2011) might refer to visually impaired students as a special case, as they are unique or different within their population of student physiotherapists. He demonstrates clearly (2011 p.93) that the approach to a special case *could* include exploratory approaches.

Having access to a group of students who were willing to provide their stories, and their knowledge and experiences added to the research project, as they were partners in the development of the interview schedule and studies 1 & 2. As I knew the students, and they were all being taught in the same university, it was possible that bias would play a significant part in the findings, reflecting only the experiences of students within a university that had educated several visually impaired physiotherapy students. However, their experiences were real and were important, and allowed me to evaluate whether my research study could answer my research questions; their participation also provided an extra layer of data from a very small population of students in the UK.

The aims of Study 1 were therefore:

1. To pilot test the semi-structured interview schedule
2. To gain exploratory data about barriers and enablers in physiotherapy education from a known group of students
3. To consider, through concept-driven analysis whether the visually impaired participants had similar experiences to other disabled students in HE
4. To use participant feedback to refine the interview schedule for Study 2

5.3 Participants

The participants in Study 1 were accessed in the way described in Chapter 4.8, via the course leader at the institution where I was working. Three participants that met the inclusion criteria (Chapter 4.7.1) consented to take part. However, during preparation for data collection, two of these three participants became graduates. They were included in the study due to their interest in the project, and due to their recent experiences of education. All three participants were from the UK, two were

English, and 1 from the devolved nations. The table below shows some of the demographic information about the participants, identified by number to anonymise them;

Exploratory study Participant	Gender	Status	Vision
EP1	Female	Newly qualified	Print reader requiring increased font size. Vision affected by lighting.
EP2	Female	Newly qualified	Print reader with magnification equipment and software. Vision affected by lighting and contrast. Cane user.
EP3	Male	Current student	Print reader with magnification equipment and software.

5.4 Methods

A draft interview schedule based on the literature review in Chapter 3 was prepared, using the terms barriers and enablers to guide questioning. Section 4.9.3 identifies specifically how the questionnaire was designed and how the content, order and question type was chosen. Appendices 1-4 show the development of this schedule, with feedback from my supervisors and justifications from the literature.

5.4.1 Using a participatory approach

McColl and Adair (2013) and French and Swain (2008) identify that carrying out research *with* disabled people, rather than *on* disabled people ensures that the process of research is democratic, and respects the participants in research as partners. Participatory research methodologies have evolved from approaches that,

amongst others, explored experience, like this study was designed to do (French & Swain 2008). I chose to involve students, within a participatory approach, in the planning and refinement of the interview schedule. Using known students who had the specific experience and understanding of what I was exploring, ensured that the methods I had chosen were acceptable to visually impaired students, and would enable me to answer my research questions without offending or excluding the participants by my questions. Using a participatory approach also provided me with some feedback. As I mentioned before, Bryman (2008) suggests putting yourself in the position of the participant. As I am a sighted, qualified physiotherapist, working as an academic this was impossible. Traditional research has considered the researcher to be an expert (Chafetz 1995, cited in French and Swain 2008), which I cannot be in this context. Therefore, by actively involving visually impaired students I was able to ensure that my questions were relevant and appropriate.

5.4.2 Data collection

Data collection was carried out as per Chapter 4.10 with sufficient time to provide feedback on the interview schedule, reflecting the participatory nature of the process (French & Swain 2008). The interview schedule (Appendix 5) was used to guide the questioning and act as a checklist to ensure that all the issues were covered for each participant (Thomas 2011, p.163). I made notes during the interviews which the participants were made aware of. As face-to-face interviews were used, and the participants knew me, a friendly and open environment that facilitated insightful and honest data was created. This reflects the findings of Irvine, Drew and Sainsbury (2013) who identified that this type of interview generates longer, greater data and can require less use of confirmatory or prompting type questions. The interviews all took around an hour and the participants were very keen to share their experiences

of learning, even though some were less than positive. The prompts in the interview (Kvale 2007) were used well and the participants gave full and frank answers. At completion of each interview, recording was stopped, the participants were thanked and the informal discussion about the content and process of the interview commenced which is described below.

5.4.3 Pilot testing the semi-structured interview schedule

The participants provided verbal feedback on the content and process of the interview. In general, there were no issues or concerns in terms of pace, questioning, order or structure; however, some questions were ambiguous. Each participant felt that some context questions would have been useful about their visual impairment as I had not asked them formally. Although I was aware of the history of the participants in this study, I would not have any prior information about the participants in Study 2. The participants felt that this would show that I was interested in the Study 2 participants individually and it would allow them to explain their visual impairment in their own words. Wording was amended and contextual questions about participants were added to the schedule for Study 2 (Appendix 8).

5.4.4 Data analysis

Interview recordings were uploaded to the computer and transcribed verbatim using pseudonyms (EP1, EP2, and EP3) and were analysed as described in Chapter 4.10. The key concept-driven themes below from the literature in Chapter 3 were used to structure the analysis using a deductive process;

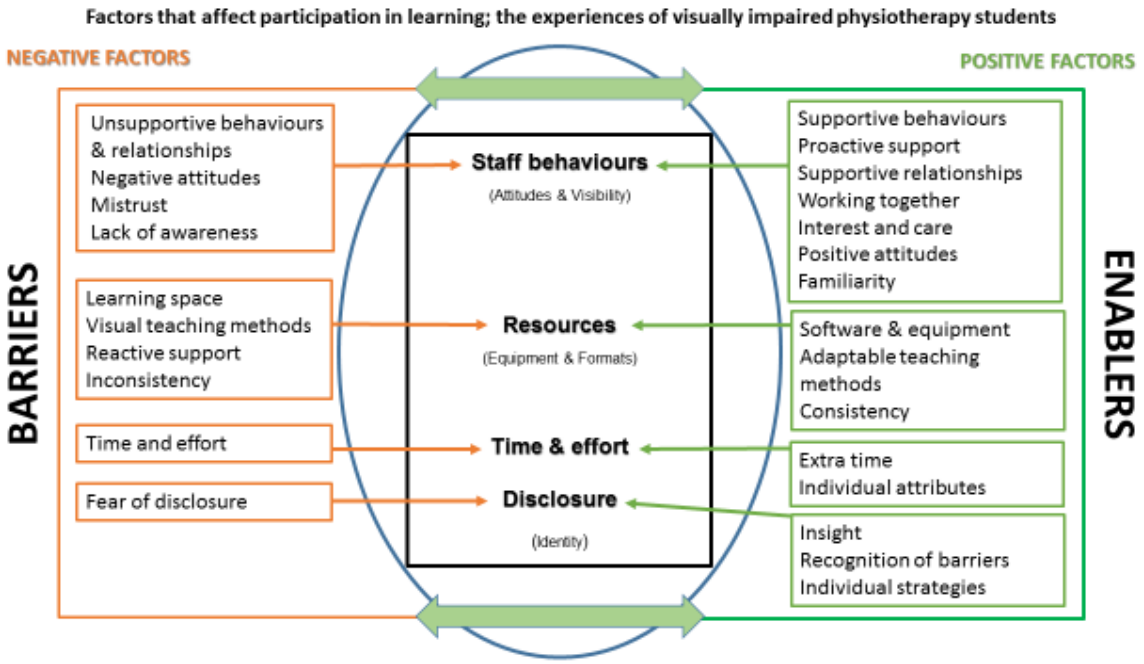
- Staff behaviours
- Resources
- Equipment
- Formats

- Attitudes
- Identity
- Visibility
- Time & effort
- Fear of disclosure.

5.5 Findings

Analysis of the data demonstrated the existence of all 9 concept-driven themes identified above. Each of the 9 themes was illustrated using quotes from the participants (EP1, EP2, and EP3) to provide context and examples of the 'lived' world experienced by the participants (Gibbs 2007). Four themes were particularly relevant to the participants in this study as they were identified and discussed by all three participants: *Staff behaviours*, *resources*, *time and effort*, *and fear of disclosure.* These themes are presented in Figure 4;

Figure 4: *Shows the existence of all nine concept-driven themes from the literature, and the four themes that were data driven and discussed by all four participants (in bold);*



5.5.1 Staff behaviours

Staff behaviours affected learning both positively and negatively, suggesting that staff acted as both barriers and enablers for learning. Positive staff behaviours reflected time and interest by actively checking that students were accessing learning and providing accessible resources prior to class. Specifically in practical classes, where physiotherapy skills were being taught, the use of one-to-one demonstrations ensured learning;

> *"What helped me most was when the tutor would take my hands and show me how it was done…and then watch me do it after to see if it was right or not . . . you know just me and them." (EP2)*

Where staff had taken the time to discuss support needs with students and could provide options or adaptations, optimal learning was facilitated;

> *"They would ask if they could come and show me. I didn't have to ask that much." (EP2)*

Participant (EP3) identified that some lecturers were unable to adapt their teaching to make it accessible;

> *"They expect a normal person to be able to understand but it's different for a visually impaired student." (EP3)*

When lecturers were unable to provide teaching in an accessible way, such as practical demonstrations in addition to verbal instruction, it created a barrier for learning;

> *"When we did the shoulder in a lecture, there was no demo; it was just read off the screen. Even if someone just talks it through, if you can't feel it in front*

of you it's still very hard to make sense of . . . I found it hard to get it without the physical re-enforcement." (EP2)

For another participant, barriers were created by purely visual methods:

". . . when we are expected to do skills off a projector or the board." (EP3)

If a lecturer failed to explain fully what was written or shown on the board, participants had to access the material in other ways:

"I ask my mates. I tend to listen to what a lecturer is saying, not read it, but then go home and read the lecture." (EP3)

How a lecturer spoke about visual material was also a factor:

"Lecturers saying things like 'this', 'that', 'there', all those phrases are just no good… you lose out, you've lost the whole train of what's going on." (EP2)

5.5.2 Resources

Resources were identified as having either positive or negative effects on learning physiotherapy. Having timely access to resources such as equipment and library books enabled learning; however, lack of accessible resources were factors identified that created barrier to independent learning. Library staff also enabled learning, supporting the previous theme of staff behaviours:

"They (the librarians) were really helpful, you just went to the service desk and they would help you to find books." (EP1)

The participants had various experiences of reading books. Participant (EP2) had her own closed circuit television (CCTV) equipment that enabled her to read without difficulty. However, although another participant could access books and could read them, he did not want to study in the university setting:

"I have a magnifier that I can use and read in my own time." (EP3)

Extra time and effort was involved in reading textbooks, compared to using electronic material. Although digital copies of books were preferable, gaining access to them was problematic:

"…there's the hassle factor, it's much easier for students who can read books than for the people that might want digital copies. The barriers aren't to do with me or the university it's just how books work." (EP3)

Inequity of access to the *breadth* of appropriate books for students was identified, compounded by other factors such as fatigue and time:

"You certainly don't read the volume of what other students read because you don't have the time to do it and you get tired quickly reading as well." (EP1)

Other learning resources also created barriers. PowerPoint presentations, although provided for the students electronically in advance, were inaccessible due to specific individual requirements to enable reading:

"You can't play around with the colours and sizes of diagrams." (EP2)

Similarly accessing PDFs caused problems:

"PDFs were a nightmare, they didn't obey my rules to have them white on black, when I did zoom in the problem is that you spend forever clicking to finish a sentence so your reading speed is terrible." (EP2)

5.5.3 Time and effort

All three participants felt that despite the provision of reasonable adjustments, they required more time and took more effort to learn, creating fatigue:

"CCTV really helped for reading and reading books . . . but I did struggle, I got tired a lot especially working during the day. I've always found concentrating for long periods hard and my eyes were getting tired, especially in second year I got quite stressed." (EP2)

Extra time and effort affected getting around at university too:

"I didn't know how I was going to find these places . . . (laughs). I remember a staff member said 'I'm sure you can meet up with people on the course' . . . but you can't really, when you first start you can't seem to recognise people, so how do you know who is on your course in a big open space?!" (EP2)

Time and effort to get around and to learn created barriers:

"The things that you have to learn to go and do, you went and learnt, but some things you could get around . . . like I always met up with somebody before practical classes." (EP2)

The heavy workload on the physiotherapy course required some strategic use of time for independent study:

". . . the effort of using the library is more, you can't just go into short loans and pick up a book, and choose which bits you want to quickly read." (EP1)

Despite positive support from the library staff, the effort required was magnified for the participants, and compounded the issue of access to a limited range of titles. One student stated that the reading list was a good place to start, however, the time required to study meant that strategies were necessary to optimise time:

"In terms of general searching I would look at what they referenced in their article and I would snowball it, cross-referencing. I was a slightly savvy student and I had to use my time wisely." (EP2)

Another student was equally honest, identifying that she took 'short cuts'. Needing to become more independent in learning than required at school created an additional barrier:

"If you're just trying to read around the subject you take the short cut! Suddenly you're in a situation where you have to put more effort into finding out and reading around, so actually time and effort wise I'm going to just be able to do the basics. And do the basics well and leave it at that." (EP1)

5.5.4 Disclosure

One participant expressed concerns about disclosing to their peers. The same student appeared to demonstrate some discomfort with their identity, and their disability:

"I suppose I could've taken the opportunity to explain myself to the other students. In hindsight that might have helped me get into the 2nd year a bit better, if I had talked to the whole year, not just the people that I work with on a regular basis. A lot of them know now, some of them don't." (EP3)

There was also a concern about having to tell teaching staff:

"I'd rather it was out there . . . I wasn't confident in how other people would react to it that was the main thing." (EP3)

This participant's experience showed that they *hoped* that staff would already know, perhaps indicating fear of being judged within the educational setting:

". . . the Learning Support Agreement (LSA), that's supposed to be sent out to the lecturers . . . some lecturers find it a surprise when they find out that I've got a visual impairment, and I think what was the point of filling out that form in the first place?" (EP3)

Having to ask staff for support in class and being singled out was also a barrier to learning:

"If there was a way that lecturers could help you without personalising it that would help. It's nice to know that someone's there helping you specifically. . . but at the same time it's that 'single-out' factor, I don't want to be separated out just because I've got a disability." (EP3)

However, overall it was clear that by disclosing (which all three participants had done), insight into the factors that created barriers was shown which led to individualised support described in the earlier themes.

5.6 Discussion

Study 1 addressed the aims identified in section 5.2; it successfully pilot tested the interview schedule and process through a participatory process and refined it for Study 2. The process enabled data to be collected from the known participants about the learning experiences of visually impaired physiotherapy students and through analysis using concept-driven themes, showed that the participants faced similar barriers to their disabled peers in HE.

5.6.1 Pilot testing and refining the semi-structured interview schedule

Gaining qualitative data from visually impaired physiotherapy students using the semi-structured interview as a pilot was successful. It was evident that knowing my participants facilitated easy conversation, but it also produced honesty and

objectivity in relation to the types of questions being asked. The participants agreed that the questions enabled them to share their experiences and to identify the factors that created barriers and enablers which achieved the aims of this exploratory study. The participants' feedback refined the interview structure which was subsequently used in Study 2. The interview schedule was therefore appropriate, useful and reliable within this study.

5.6.2 Barriers and enablers in physiotherapy education – are the experiences the same as other disabled students in HE?

The semi-structured interview successfully generated data about the participants learning experiences, allowing them to share their stories. Even in their unrefined format, the questions successfully enabled participants to identify barriers and enablers in physiotherapy education that reflected the concept-driven themes. However, it was evident that much of the data related to academic staff behaviours and practices, both positively and negatively; learning was best facilitated by staff who were aware of the different needs of individual students, and who could provide access to appropriate resources and learning opportunities in the classroom. Conversely, learning was impeded by difficulties accessing teaching and learning materials in an inappropriate format, by the additional time and effort required to read.

The findings showed that some academic staff appeared to be unable to provide inclusive and accessible teaching and learning material for the participants. This supports Fuller et al (2004a, 2004b) and Vickerman and Blundell (2010) who suggested that staff were unaware of, or were unable to adapt to specific individual's needs in class resulting in inaccessible teaching. Unsurprisingly, the importance of individual support was mentioned many times by the participants, reflecting the

findings of Tinklin and Hall (1998), Borland and James (1999), and Holloway (2001), supporting Warren's (1994) theory of 'individual differences'. Although the participants were visually impaired, they had different and individual learning and support needs. It was clear from the findings that where open discussion between staff and students had created an awareness of individual support needs, that *individual* learning and independence could be facilitated. It was also evident that these factors should be expressly identified by the participants through prior discussion, rather than being assumed, perhaps based on previous experience of other visually impaired students or physiotherapists (Owen-Hutchinson & Atkinson, 2010).

Two student approaches were evident in the findings: a proactive and participatory approach for ensuring access to learning, and a second, more reactive approach to support and learning. Where the participants faced barriers in class, those who were proactive and unafraid to ask could gain the support they needed, particularly in practical classes where teaching methods were visual. The examples of instruction in practical classes suggested an assumption that all students could see. This may suggest that staff were unaware of their use of descriptive language during teaching, leading to inaccessible demonstration in teaching. It is possible that by staff addressing these practices, the learning experience for *all* students would improve; supporting Owen-Hutchinson & Atkinson (2010) and Hanafin et al (2007), and embodying the principles of inclusive education (Morgan & Houghton 2011). Positive staff behaviours for learning reflected time and interest; staff who actively checked that students were accessing teaching and provided information prior to class in an accessible format enabled learning. Specifically, in practical classes, where 'hands-on' physiotherapy skills were being taught, the use of one-to-one demonstrations in

addition to the whole-class demonstration was an enabling factor. Those staff who demonstrated a proactive and participatory supportive approach, engaging more with their students could, according to May & Felsinger (2010), gain a higher degree of participation from their students. This again supports inclusive learning approaches that respect and respond to difference, clearly demonstrating teaching from a position of values (Morgan & Houghton 2011 p.11) that should resonate with physiotherapists' Code of Professional Values and Behaviours (CSP 2011).

Each of the participants had different issues with resources such as books and learning material. Timely provision of accessible and appropriate (individual) learning materials created a barrier, reflecting the findings of Fuller et al (2004a), Hanafin et al (2007), Reed and Curtis (2012) and echoing some of the comments made by the participants in Bishop and Rhind's (2011) study. However, even when resources were provided in a timely fashion, reliance on reading was a barrier due to accessing the library, using technology or becoming tired, and struggling to concentrate, supporting Reed & Curtis and Bishop & Rhind. These findings further support the 'emotional effort' of having a disability described by Holloway (2001), Goode (2007) and Beauchamp-Pryor (2012).

The findings did, however, identify some good practice in equipment and resource provision, suggesting that the issues were not always related to support. However, the implications of extra time and effort required to study may not have been considered fully by academic staff, particularly for an intense course of study such as physiotherapy. 'Strategic' use of time was identified by the participants as an enabling factor; this may not necessarily be a positive factor in HE where the underlying philosophy is to gain a breadth and depth of knowledge in a subject. However, as Reed and Curtis (2011) identified similar issues in high school students,

this may indicate wider issues about the transition from school to university education. While some barriers such as access to breadth of material could be supported through reasonable adjustments, developing independence in learning may create greater barriers for visually impaired students. This may suggest the need for the development of additional skills to their non-disabled peers in HE, further impacting on the 'emotional effort' experienced by disabled students.

Whilst fear of disclosure was a recurring theme in the literature (Fuller et al 2004b; Goode 2007; Holloway, 2001; Miller et al 2009; Ryan 2011), it was only discussed as a barrier by one participant in this study. One explanation was the choice of participants; the inclusion criteria for this study stated that participants must have fully disclosed their disability. However, there were issues around willingness and comfort to disclose; one participant did not want to be singled out or treated differently to his peers. This reflects the findings of Atkinson & Owen-Hutchinson (2013) who identified that visually impaired physiotherapists often minimise or conceal their disability so that they do not initially appear disabled. Fear or embarrassment about a disability that may not be immediately obvious may be a hidden barrier to accessing specific support, which may impact on learning. The need for early and effective communication with students by supportive staff about support mechanisms and processes is clearly important in the creation of an enabling learning environment that develops independence. The case for choosing specific academic tutors with the willingness, experience, and time required to provide students with individual support requirements may enhance support and engagement.

These findings have identified the importance of staff engagement and involvement in support of learning for the visually impaired participants in this study. The

importance of individual and specific support in teaching and learning physiotherapy was mentioned many times, reflecting the findings of Tinklin and Hall (1998), Borland and James (1999), and Holloway (2001). It was clear that the attitude and teaching methods of staff affected learning, both positively and negatively, supporting the findings of Holloway (2001) and Fuller et al. (2004a). Providing accessible physiotherapy education relies on open communication between staff and student, and awareness of the needs of both in accessing and delivering physiotherapy education in the university setting. Although there are requirements to support disabled students (OPSI, 2010, QAA 2013), some staff may not have the awareness, or insight into their own teaching methods to identify inaccessible practices. It was clear from these initial findings that where staff were proactive, responsive, open and accommodating, taking time to work collaboratively, they were embracing the principles of inclusive education by being holistic but student-centred as well (Porter 2012).

5.7 Limitations of Study 1

This was a small study, with three known participants from one institution, which could have biased the findings. However, analysis demonstrated that similar barriers to their disabled peers in other institutions were faced, and different experiences of similar teaching practices were gained, reinforcing the need for individual support even within one institution.

This study only considered the *university* based learning experiences of the participants. This was a limitation identified by the participants and myself as practice based learning is an integral part of physiotherapy education which was not considered in Study 1. Practice based learning was included in Study 2 (Round 2),

demonstrating the value of participation and the evolving nature of qualitative research (Robson 2002).

5.8 Conclusion

This chapter successfully demonstrated an exploratory study into the learning experiences of visually impaired physiotherapy students using semi-structured interviews. It showed that the interview process produced valid data, producing opportunities to share experiences of barriers and enablers in learning physiotherapy. Through pilot testing the interview process was shown to be reliable and useful, and with participant feedback, would gain useful data in Study 2. The findings showed that there were similarities between the experiences of disabled students in HE and these physiotherapy students, with specific examples in relation to both physiotherapy and visual impairment that add to the literature. There were some clear indications of meaningful engagement with students, and some inclusive and student-centred approaches to learning in physiotherapy. However, there were also many barriers that showed a lack of insight and or experience in educating this group of students. What was clear was the importance of staff-student collaboration and engagement to ensure that learning experiences were positive.

Study 2 in the next chapter builds on this exploratory study, considering the factors that create barriers and enablers in the learning experiences of visually impaired student physiotherapists across the UK, in both university and practice based learning settings.

CHAPTER 6: STUDY 2 (ROUND 1) - UNIVERSITY BASED LEARNING EXPERIENCES OF VISUALLY IMPAIRED PHYSIOTHERAPY STUDENTS

6.1 Introduction to Study 2 and the component rounds of data collection

Study 2 was informed by the participatory evaluation of Study 1; it became clear that in addition to university based learning, *practice based learning* should also be explored. Physiotherapy education requires students to learn both the *theory* (in university) and the *physiotherapy skills and practices* (in practice based learning); so, this was a relevant and appropriate development within the emerging research project. The research questions reflected both required aspects of learning and the methods ensured that both were explored.

Study 2 included two separate rounds of data collection;

- Round 1 explored the experiences of learning in the university setting
- Round 2 explored the learning experiences in the practice based setting

This chapter presents the findings from the Round 1 interviews which explored the university based learning experiences of visually impaired physiotherapy students in the UK. The findings of the Round 1 interviews were presented at two UK national conferences (Frank et al 2015, Frank 2015). Chapter 7 presents the findings from Round 2 about the experiences of practice based learning.

6.2 The participants

Study 2 required access to visually impaired physiotherapy students in universities across the UK; this process was described in full in Chapter 4.8. A total population sampling strategy was employed. Four participants from four different universities approached me by email and all consented to take part. All were in their first or second year of study at the point of recruitment, and three were from England and one from Mainland Europe.

Study 2 Participant	Gender	Status	Vision
P1	Female	Current student	Blind. Screen reading and text-to-speech software user. Cane user. Learning braille.
P2	Male	Current student	Print reader requiring increased font size.
P3	Male	Current student	Print reader with magnification equipment and software. Vision affected by lighting and contrast. Cane user. Learning braille.
P4	Male	Current student	Print reader with magnification equipment and screen-reading and text-to-speech software.

6.2.1 Recruiting participants – an additional finding

There was an unexpected finding from the request for participants. The initial email to the course leaders purposely did not ask for a response to myself, and did not ask them to identify their potential participant to me (to respect confidentiality). However, a very high proportion (29/35 = 83%) replied, and of those, 26/35 (74%) confirmed that they did *not* have any current visually impaired students. Five course leaders

replied identifying that they *did* have a visually impaired student registered with them, although one was not appropriate due to other (undisclosed) reasons. The follow up email resulted in a response rate of 91% (32/35). One further course leader confirmed that they had a student with VI but the student did not contact me to participate, despite a follow up via the course leader. Although the responses from course leaders were not requested, this information confirmed that despite the small participant sample (n=4), I had accessed the whole population of visually impaired physiotherapy students.

6.3 Data collection

Following evaluation of the interview schedule in Study 1 (Chapter 5.4.3) a refined semi-structured interview (see Appendix 8) was used face-to-face only (see Chapter 4.10). The interviews were informal and friendly and generated a lot of conversation based data. Some of the interviews contained discussion about university support processes and about my experiences which added to the depth of interaction and encouraged the participants to share in an open and honest way. This was probably due to the participants' awareness that I was a physiotherapy lecturer with interest and experience in teaching and supporting visually impaired students. The interviews lasted between an hour and an hour and a half; as in Study 1, each participant was very keen to talk about their own physiotherapy learning experiences. At the close of each interview, the participants were asked if they would take part in a second interview in the next academic year, or after their first placement, to share their practice based learning experiences. They were also asked how they would like to be described in the written text, and if they would be happy to check their interview transcript. Interview data was transcribed verbatim, and sent to each participant in their preferred format for member checking prior to analysis as per Chapter 4.10.4.

6.4 Findings – factors that create barriers to learning in the university setting

Thematic data analysis (as described in Chapter 4.10.1) identified three major themes, with subsidiary themes about the factors that created barriers for the participants;

- *Environmental factors* (the learning space, visual resources, teaching methods)
- *Unsupportive Behaviours* (attitude, inconsistency, lack of awareness / insight into support needs)
- *Time and Effort* (reading, resources)

6.4.1 Environmental factors

Barriers were faced in the learning space due to not being able to see written information in class;

> *"We all sit in the middle and we've got two whiteboards and then the lecture slides above. Whenever they want to demonstrate anything they'll write on the whiteboard, but, I'm sitting a good 20 metres back." (P4)*

The distance from the board was not the only barrier;

> *"...they dim the lights for the PowerPoint and I can't see in low light…. If it's really necessary to read then, I'll strain to do it." (P4)*
>
> *"I don't like the whiteboard but I take a picture of it so I can look at it at home. Sometimes they're not that clean so it doesn't come out as well". (P2)*

The contrast of colours in visual media created further barriers;

> *"...the only thing with whiteboards is like a green pen or a light colour cos it's really hard to distinguish.... when people use slides they sometimes put like*

orange on brown for example and they're horrible colours! I prefer light on dark or dark on light." (P3)

Although visual resources were generally provided, they were not fully accessible;

"They'll give us a paper handout, but it's really like in size 10 or size 8 fonts even sometimes, so…. I can read it, but for just only very, very short periods of time." (P4)

Purposely blank slides in PDF and PowerPoint also reduced access to information, and participation in class;

"...they do animations where every time I press space then something appears. When you get the PDF nothing is there, so you get a lot of blank slides...." (P4)

"Obviously, it's designed [for the students] to fill in the gaps when they're watching the PowerPoint, but I can't see it…." (P4)

Inaccessible resources were not the only factor;

"….the kind of eye strain and headaches associated with it, if you have to read it for longer than ten seconds or so." (P4)

Accessing textbooks in the library was physically and visually difficult;

"...reading the spines…. especially on the bottom shelf, I really have to like commando crawl through the aisles to get the relevant books." (P4)

Some teaching methods created barriers. Concepts that were accessed and understood by sighted students created difficulties, even where careful spoken explanations were given;

"Even if it was described in the most wonderful way it was still quite difficult..... Like neuro when they talked about nuclei you really need a visual to understand the loops and they used a picture for the students. For me it took me a while to get my head round. Even if you are a brilliant lecturer it's still quite a difficult thing to get clear without pictures." (P1)

Learning applied anatomy using each other as models caused other problems;

"There's body surface marking ...it's usually demonstrated on one person at the front and so everyone gathers around.... I can't really see." (P4)

Timing of lessons also created barriers, especially for learning anatomy where there was a large amount of content;

"I'm trying is to learn it as fast (as I can) afterwards, we have longer practical classes, but this is too soon after the lectures…. to learn it all." (P2)

6.4.2 Unsupportive behaviours

Unsupportive attitudes towards reasonable adjustments were experienced, some positive, some negative and some laissez-faire;

"*I spoke to the Head of Programme lots of times and it never got dealt with...then with a new person it got dealt with and it's been fine ever since. I think it was bad communication...." (P1)*

Although support was provided in most cases, limitations put in place by some staff and inconsistent provision reduced access to the curriculum;

"Some would put them up on Moodle but some wouldn't….they didn't want us to read it all then not come to lectures!" (P1)

"It's quite hit and miss.... It usually starts off once they've been reminded and then they'll go back downhill again." (P4)

Although unsupportive attitudes were experienced, lack of awareness or insight into individual students' needs appeared to emphasise this barrier;

> *"...in exams they give you that tiny little cube table and they enlarge the actual paper and so it was like an absolutely massive newspaper....in the exam hall they used to put like three tables in a row for me, so I used to be singled out at the front with these massive tables with this massive newspaper unfolding and everybody would get annoyed...." (P4)*
>
> *"...one lecturer ... handed me a sheet of paper ……I was waving my hand about trying to get it and she didn't put it in my hand! That experience wasn't positive...." (P1)*

6.4.3 Time and effort

All four participants identified that they put in a significant amount of additional time and effort into their studies;

> *"Lots of things take longer to do myself than they do for other people…. learning to touch type as I look at the keys and don't look at the screen and I won't know if I've deleted things, so yeah I do think things take me longer...things like reading writing and typing." (P3)*
>
> *"..Because I am slower, I need more time [to find bony points]…..because I am taking much longer than the others to learn I need more people to be there to help me learn. It's not always that helpful, they rush it over that is frustrating!" (P2)*

Reading created barriers in terms of time and effort;

> *"I'm fine with written assignments....still, I do have to spend a lot more time than other students on it with regard to reading journals." (P1)*

"..I used to have an electronic magnifier....The problem then is you don't get too much text on it and you always have to move it, especially when you're reading like a large chunk of text." (P4)

"*I found I was always working much harder than the other students cos I would do a lot of reading before the lecture so I was one step ahead....." (P1)*

Resources as reasonable adjustments created additional time and effort;

"I use JAWS for the computer and I had to learn that at uni,...It's quite difficult to get good training on JAWS so I'm still working on it to be honest!" (P1)

Despite having access to electronic text books, they were not particularly user-friendly;

"I've only got Gray's Anatomy electronically. That's still quite difficult because you can't flick between the pages; you have to go through like the folders with the different topics in it." (P4)

6.5 Findings – enabling factors in learning

Three major themes with subsidiary themes about the factors that enabled learning were identified;

- *Supportive relationships* (being accessible and approachable and working together)
- *Student attributes* (communication skills, being organised and being self-aware (including disclosure))
- *Strategies and adaptations* (being a model, individual enablers, learning by doing and extra time)

6.5.1 Supportive relationships

Overall, there were many specific human traits within the supportive relationships theme that ensured access to the curriculum. Positive learning experiences were enabled by the development of collaborative and supportive relationships between academic staff, support staff (such as Support Workers), and student peers. Supportive relations were exemplified when academic staff would share disclosure information which enabled them to respond supportively;

> *"I have a student agreement thing and that was given to all of my lecturers so all of them know about it." (P3)*

For one participant who had not previously disclosed his visual impairment, the disclosure became an enabler;

> *"Once all the teachers were aware of it, provisions started slowly coming into place." (P4)*

All participants mentioned that their lecturers were accessible and approachable, taking time to check on them during practical sessions, and to make sure that they could access the teaching activity;

> *"The majority of times, even if I wasn't the model, would come and go through it with me in class one to one and demonstrate and make sure I understood it. When you learn stuff the first time it can be hard to get your head around so they would make sure I knew it." (P1)*

It was clear that the lecturers were aware that the visual nature of physiotherapy activities such as assessment of walking could create barriers;

> *"Last week we were analysing gait and so they check if I'm alright with it. That's nice ... they can see that there's something that might be a bit more*

difficult so they come and check so they know I'm getting on alright. And sometimes they do maybe help in terms of visual help." (P3)

There was clear commitment to being available to the students outside of class, again demonstrating that academic staff were supportive of student's needs;

"Most lecturers are happy for me to come if they're free to knock on their door; it's good that they're helpful. " (P3)

"They will go over it with me when I need extra time but thankfully those occasions are few and far between. I was lucky in that respect." (P1)

Having access to supportive staff was a new experience for one participant;

"This university is the only place where I have ever had any support or help. Before I came here I just had to get through life all by myself, with my parents as much as they could help." (P2)

Working together was very important in enabling learning. Participant 1 worked closely with a support worker; the success of this supportive relationship was understanding and awareness of support needs;

"They know how I work best, better than anybody, even the lecturers 'cos they're working with me all the time." (P1)

"Although this sounds quite bad, they're just there to be my eyes." (P1)

The absolute importance of the relationship between Participant 1 and her support worker was clear;

"The lecturers ... don't have the time that my support worker does….I was very lucky. If I hadn't had her I wouldn't have coped." (P1)

A further enabling factor for learning was working with supportive peers; working together facilitated support and created a learning environment where knowledge was shared;

"The other students (were) so helpful, ensuring that I understood. They gradually learnt what I could and couldn't understand. Without that it would make it very difficult because if you don't understand, it would have made my life very difficult especially in the neuro module." (P1)

"Everyone seems to know different things so we learn from each other." (P3)

However, although having supportive peers was helpful in enabling learning, this was not felt to be unique;

"You learn from each other anyway whether you're VI or not!" (P1)

Working with peers also provided a bridge between the lecturer and the participant; if there were difficulties participating in a class, for example where the emphasis was on a visual teaching method, the peers would provide support;

"The other students were fab, they were really helpful if I didn't understand...it was sometimes difficult to follow in the class, especially in 3rd year (with) very specific techniques." (P1)

"… if I don't understand something, I get them to explain it." (P3)

The support of peers was clear in this incident where formal support through the DSA had not been provided;

"I had an essay to do in the first few weeks so I just had to get on and get by with my friends helping me to get books." (P3)

Interestingly Participant 4 reflected on his resit year where he felt that working together more closely with his peers would have enabled learning for him;

"I think one thing that I should've utilised more is using the group sessions with other people, because everyone basically pools their knowledge. I've always been quite happy being independent, but it's just something that might

make it a bit easier because everyone obviously talks (about it) and so you to listen and it usually sinks in." (P4)

6.5.2 Individual student attributes

The findings showed that the participants demonstrated individual attributes that enabled learning, such as communication skills, being self-aware (including disclosure), and being organised. Having good communication skills was key in establishing relationships for participant 1, who re-sat a year and joined a new cohort;

"I'm very talkative and sociable. The new group I'm with is much better, I get on with everyone. They're fine with me!" (P1)

Communication skills were important to ensure support was accessed from Disability Team staff;

"You do need quite a lot of input at times really so it was good to have a good rapport with them so that helps." (P3)

Participant 1 was very self-aware of her learning and support needs, and could communicate well, expressing and sharing these with her lecturers and peers;

"I think the reason it has been positive at the uni overall is because of me, I've been very open and I won't let anything stop me and I'm not afraid to say something if I'm not happy. That's probably what's got me through university rather than anything else! Now, the uni are well aware of my needs and they meet them and can adapt……I've had to fight for a few things and I've made them a lot more aware..." (P1)

Being self-aware and confident to disclose enabled the participants to gain support;

"I have a student agreement thing and that was given to all of my lecturers so all of them know about it." (P3)

One participant had not disclosed his visual impairment in his previous year and had failed some modules. Becoming self-aware enabled him to fully disclose;

> *"Once all the teachers were aware of it (because I planned to retake the year), provisions started slowly coming into place." (P4)*

Being self-aware and having good communication skills enabled the participants to ask for help;

> *"If I don't understand something.....I get them to explain it." (P3)*
>
> *"At the moment I can make the goniometers out but I'll just ask the people I'm working with ask them to help." (P3)*

Participant 2 found asking more difficult, although his lecturers were very supportive;

> *"I should just not think and worry that she would tell me I was doing the wrong thing. I think it's having been told previously that I was too thick by teachers..." (P2)*

The findings identified that participants needed to be organised to access material in class, or to complete independent study;

> "...*when preparing for exams, or any kind of assessment, I'll write a list of all the topics that need to be covered. I really just tick them off as I go through them really. Find, you know, the topic – either the information that's required for it from the PowerPoints on Moodle and then find any extra information in the textbooks. That's really like ..... just personal preference, but that's really just how I've learned the most." (P4)*

"I always read through the notes before lectures. I was always well prepared so I made sure I could participate as much as I could…" (P1)

"I've really tried to learn the anatomy before I've had practicals I've been more relaxed about it, if I know my anatomy it helps especially." (P3)

6.5.3 Strategies and adaptations

The findings reported a selection of strategies and adaptations employed by the participants to enable learning such as being the model, individual enablers, and extra time. When learning physiotherapy skills, practical teaching demonstrations are used by lecturers and students are asked to volunteer to act as the model; being a model was an enabling factor in practical learning;

"My lecturer is fantastic really and she just picks me as the model…I find it useful." (P2)

"….you can see and feel what the movement of palpation should be like and you can see as you're close, watching." (P3)

"Yeah, I think if it happens to me it does sink in a bit more." (P4)

Being the model also enabled the integration of theory and practise and provided feedback to Participant 4;

"I always need to have a good knowledge before in my head....having a demonstration on me or just practising on someone I know to check it's correct." (P4)

It was very clear that all participants had learnt a lot of effective, but individual enablers, ways of learning that overcame any barriers experienced because of their visual impairment. For participant 1, it was important that she had the structure and content of a lecture in an accessible version, e.g. not PowerPoint or PDF which she found difficult to access;

"Having stuff in word made it readable, then I knew the general structure of the lecture and the handouts they were going to give so that I could get the most out of my learning experience at university…. I just wanted to make sure I got the best out of it." (P1)

She also found that tactile alternatives to pictures in lectures could enable learning;

"...she taught about muscle fibres…….with a bundle of straws which was a great way of learning it for me!" (P1)

For participant 2 developing audible methods to access the curriculum were his individual enablers;

"In class I know what to concentrate on, and then I collect all the material from books and record what I need. I listen to it so I have a basis for what I need to learn and when I go over it again, listening again makes it stay there better!" (P2)

He also identified specific software that suited his way of learning;

"I tried Clara-read, it can read most electronic material and websites and some PDFs …. I could also practice the software I had, that can read for me and another that I could talk into the computer, Dragon Dictation, I can talk to the computer and it prints it out for me!" (P2)

Participant 3 was very aware of how he learnt, and the possible barriers in the classroom;

"In my head I can visualise where everything is and that helps, I do find that sometimes I have to ask my lecturer to help me distinguish something...I find sometimes when they demonstrate you can't always see, like in the hand, it's very small and quite hard to tell exactly what they're doing, so I have to ask

and get someone to show me exactly where their hands were when they showed us." (P3)

Participant 4 was very aware of his own learning style and the enablers that worked for him as an individual, including using his memory;

"*We are encouraged to make notes, but I don't… even if you don't look at it from a visual impairment point of view, I don't really learn from my own notes. I like learning from textbooks and that's how I usually learn." (P4)*

"Something that I always like doing is improvising, and just having a lot of the information in my head and just like – kind of just like reminders on a slide and summaries." (P4)

Rote learning as a learning strategy was also identified by participant 1;

"I found a brilliant website that has all the muscles and the origins and insertion and nerves so if I ever forget a muscle I go and check it! My support worker would dictate and I would rote learn them and if I had any difficulty I would get her to describe it to me." (P1)

An enabling strategy for all participants was the provision of extra time, provided as a reasonable adjustment (OPSI 2010). However, although extra time was given, being self-aware enabled learning through choice and experience of successful strategies;

"I have 50% extra time and I have an enlarged paper and I have typing but I find it quicker to write it." (P4)

Although extra time was frequently provided in written exams, extra time was not always necessary in assessments such as in practical exams. Again, the importance of individual enablers was important in this instance;

"I usually have an extra minute cos the only thing I need in practical exams is time to read the scenario at the start and sometimes analysing some movements that I have to look at more than someone else would." (P3)

6.6 Discussion

Despite disclosure and the provision of reasonable adjustments, all the participants in this study reported factors that created barriers to learning. The provision of support was not the issue with most of the participants; this was received overall. However, *how* and *when* the support was provided created the barriers to learning. Support was not always anticipatory, and was reactive; this led to inconsistency in support practices, supporting Claiborne et al (2010) and Hewett et al (2017) as outlined in section 6.4.2, suggesting that they were not usual, were possibly new, and were not routine for staff. Effective support needs to be proactive and anticipatory, caring and considerate of the student's impairment and their *individual* learning needs.

6.6.1 Barriers to learning in the university setting

The barriers experienced by the participants were often the result of academics focusing on the needs of the majority and being unaware of the specific needs of visually impaired students. There was a lack of individualised support for students reflecting Bishop & Rhind (2011 p.194) who concluded that a "one size fits all" approach for an "inherently diverse body of students" was not appropriate. The need for an individualised approach was not new and has been identified for many years prior to these studies (Warren 1994, Owen-Hutchinson et al 1998, Fuller et al 2004, Atkinson et al 2010, Herold & Dandolo 2009, Dearnley, Hargreaves & Walker 2010).

Some of the findings confirmed that teaching was aimed at the sighted majority, which is understandable; however, having an individual with an unmet support need

created a significant impact on the student's ability to learn. For example, by assuming that providing lecture notes in advance for Participant 4 would affect all students' attendance created a barrier to participation. Providing handouts in class (rather than before) reduced the ability of the participants to read the material, preventing timely participation in class. This finding supports those of Riddell, Weedon and Fuller (2007) who suggested that some staff were concerned about *advantaging* a disabled student through anticipatory provision; Bishop & Rhind (2011) and Reed & Curtis (2011) identified similar things in relation to the timely provision of slides and handouts. Ironically, the Equality Act permits disabled students to be treated more favourably to ensure that they can participate in learning. Unsupportive behaviours therefore may be compounded by lack of awareness or empathy as teaching was provided based on the premise that all students could see.

Factors that created barriers within the learning environment were lighting and using a whiteboard at the front of the class, creating a 'visual' teaching environment (Lewin-Jones & Hodgson 2004) supporting Bishop & Rhind (2011), Brandt (2011) and Reed & Curtis (2012). The whiteboard was used without considering what would happen to the material on it if the students couldn't see it, or note it down. Although one of the participants took photographs, and another went down to the board at the end of class to copy down what was written, these situations affected their learning experience, creating barriers or requiring additional effort. My findings support those of Vickerman & Blundell (2010 p.28) who suggested that restrictive teaching was due to "a lack of modification of teaching by tutors" due to lack of discussion with individual students. In my study, when data was collected, the participants were the

only visually impaired students on their courses which could explain the staff's lack of awareness of these problems and inconsistent support.

It was evident that the additional time needed to participate and study was a big barrier. Accessing and reading learning material took greater time, and some material was inaccessible or limited. This reflected the findings from Study 1 that considered students in one institution; participants had to work harder, longer and be strategic with their time (Frank et al 2014). However, where support was reactive or absent, the student faced greater barriers and found their experiences of learning frustrating and time-consuming, supporting Hanafin et al (2007). Despite reasonable adjustments, more effort was required to gain the same curricular access; barriers were not always removed by reasonable adjustments, but were partially addressed, further impacting on the student in terms of time and effort (Healey et al 2006, Holloway 2001). It seems that there is an issue in equity of opportunity within reasonable adjustments; whilst extra time in examinations is provided for disabled students, the extra time required for independent study and research, or other forms of modular assessment does not appear to be considered or provided, and certainly wasn't in the case of these participants, or those in Study 1.

Unsupportive behaviours may also have impacted on the increased amount of time and effort required by the participants to complete their studies, creating an additional 'burden' (Magnus 2006, Goode 2007, Beauchamp-Pryor 2012). In my study, all the participants shared that they had needed to resit modules or academic years because of ineffective or untimely support, which supports Reed & Curtis' (2012) finding that visually impaired students may take longer to complete their studies. It is possible that failure or incompletion of studies could have been due to the sheer amount of time and effort required by these participants (Fuller et al 2004b,

Magnus 2006, Hanafin et al 2007). Goode et al (2007) referred to the “emotional effort” of being a disabled student, in fact Claiborne et al (2011) suggested that disabled students needed to ‘fight for’ the support they were entitled to, reflecting Magnus & Tossebro’s (2014) assertion that students face an ‘individual burden’ to ensure that adjustments are in place. It could be argued that this effort and time could have been much more usefully applied to studying for their physiotherapy degree, rather than accessing support that should have been provided in the first place.

There seemed to be differing amounts of proactive (or anticipatory) provision of support for the participants, supporting Gibson (2015) who identified that inclusion tended to be reactive, rather than proactive for disabled students. Where support was provided it frequently tailed off requiring the student to remind staff for support again. Hindered inclusion or access due to unsupportive behaviours could indirectly exclude visually impaired students, increasing the time and effort already required. A lack of insight or awareness by staff could have contributed to the unsupportive behaviours identified in some cases, however, there is clearly an expectation on staff who have limited understanding or experience of visual impairment to interpret the support needs for a student new to HE, and respond by ensuring accessible teaching over which they have little control. Similar conclusions were made by Vickerman & Blundell (2010) who suggested that there may be issues in staff awareness and training when teaching disabled students. This can lead to inconsistency and misguided and unhelpful teaching methods that impact negatively on the students’ experience but which the lecturer may be unaware of.

The discussion of the barriers faced by the participants raise two separate but related issues; firstly, the approaches to learning and teaching shown by the barriers

faced by the participants in this study do not reflect or support legislation (Equality Act 2010), professional guidance from the CSP (Owen-Hutchinson & Atkinson 2010) or HEA guidance (May & Bridger 2010, Morgan & Houghton 2011, Porter 2012, Wray 2013, HEA 2015) regarding inclusivity in education. A more inclusive approach to learning could reduce the need for reasonable adjustments that prevent a student being perceived as *advantaged,* and meeting the principles of inclusive education (May & Felsinger 2010, Wray 2013, BIS 2015). The responsibility to make reasonable adjustments has been devolved to staff, suggesting that institutional barriers to inclusion remain (QAA 2013). The issue therefore appears to be a gap between the knowledge and skills of individual academics in inclusive teaching and learning and the experience of the students, despite legislation and policy that mandates inclusion. When a student is unique within a cohort the legal duty to provide support is dependent on knowledge and awareness of the issues that the student may face, leaving the responsibility squarely with the student to ask for help. This is fundamentally contrary to the policy of inclusion.

Secondly, my findings confirm that visually impaired students specifically encounter barriers in relation to unsupportive behaviours and attitudes from staff, reliance on visual teaching methods and the amount of reading required. They also fully reflect two of the main components of the ICF; the existence of environmental factors such as support, relationships, attitudes and service provision create barriers that affect participation (WHO 2001, 2010). These factors were *interdependent*; unsupportive behaviours, poor attitudes and lack of insight into students' needs affected the timely and consistent provision of accessible resources for example, which compounded the lack of individualised support for each student. Barriers created in part by unsupportive and potentially discriminatory attitudes of staff, with lack of empathy

towards the visually impaired students in this study demonstrate behaviours which are contrary to the values of the physiotherapy profession, which contribute to disadvantage for students, reinforcing exclusion (Morgan & Houghton 2011, Gibson 2015).

6.6.2 Enabling factors in learning within the university setting

Despite the existence of factors that created barriers, there were also many *positive* factors that enabled learning, however, few publications have explicitly discussed these. The enabling factors were, like the barriers, interdependent. Interestingly they almost mirrored the barriers, suggesting that by addressing these factors, learning could be enabled. It was clear that the participants needed the personal attributes to openly share their needs and work closely with staff, their peers and support workers for example. Academic staff also needed to be approachable to facilitate open and shared support, which relied upon working together to provide and develop strategies and adaptations in the learning environment to enable participation. Where the participants communicated well, were assertive, proactive and well organised, their learning was optimised.

The very human nature of education was apparent in these findings, supporting those of Redpath et al (2013). There was evidence of compassion and interest in the students, and a clear desire to ensure that they could participate in class, reflecting Magnus (2006) who identified the importance of 'kindness' in support. Much of the analysis demonstrated the level of support given to enable participation in practical classes, such as being a model, and checking by staff that participants could understand and practise when visual teaching was being used. This demonstrated that a positive attitude towards the student and their learning needs was key, supporting Hanafin et al (2007) and Magnus & Tossebro (2014) who suggested that

attitudes and provision of support were interconnected. In a much earlier study, Borland & James (1999) identified varying staff attitudes to disabled students, but found that staff were proactive, approachable and accessible. Fuller et al (2004b) identified that being approachable was important, and helped students to engage in study, like Ashcroft et al (2009) who found that in nursing, partnership worked best to reduce barriers to learning. My findings support these studies; supportive relationships are essential in enabling participation in university based learning.

Student attributes were also important in gaining support, echoing the findings of Bishop & Rhind (2011) and Reed & Curtis (2012). The participants in my study were open about their visual impairment, having disclosed prior to beginning their physiotherapy courses. My findings showed that their communication skills and personality contributed to their positive learning experience. Their attributes enabled them to work together with their peers and their lecturers to access support and participate in learning. One of the attributes was being able to work together; the participants knew what they needed, and by developing good relationships with staff, peers and support workers they could participate.

To successfully manage their studies, the participants needed to be self-aware, confident and assertive. This required them to feel fully able to disclose their visual impairment, whilst also relying upon academic staff to share the responsibility to meet their needs, consistently and individually. Students needed to be organised, proactive and have the skills and attributes to work collaboratively with their peers, their academic and support staff. A recent paper by Newman & Madaus (2015) suggested that students in HE have to *proactively seek out* support, compared to being at school, which may create a barrier in itself; students are already under pressure, just being a student (Magnus 2006). This supports Hanafin et al (2007)

who suggested that disabled students must be “assertive beyond what is called for in normal student life” (2007 p.442). However, these skills and attributes may require development and support over time as they may not be in place automatically (Hewett et al 2017).

Although some previous authors such as Miller et al (2009), Bishop & Rhind (2011), Fuller et al (2004b) and Riddell & Weedon (2014) have identified that their participants were cautious about disclosing, and that their identity may have created barriers for gaining support, this was not the case in my study. In fact, some of the participants were very proactive, suggesting they had a positive self-identity and were confident in communicating their needs. Bishop & Rhind (2011) also suggested that visually impaired students needed to have strong and positive self-identity and a willingness to engage to ensure participation. To ensure that adaptations such as accessible resources were available, they also needed to be well organised to think ahead as to what would be a barrier in class and how they would be able to address it. Participant 1 worked closely with a support worker in university which was a new experience for her. However, her personal attributes and awareness enabled her to develop this working relationship, again demonstrating the links between the themes. It was interesting that this participant had lost her sight relatively recently before coming to university. This may have helped with her own awareness, but her transition to becoming disabled and to working with someone who was, in her own words, “her eyes” was probably facilitated by her communication skills and ability to be well organised and proactive. This confirms that having a disability in HE is hard; students can experience additional pressures in their learning compared to others (Magnus 2006, Goode 2007, Roberts 2009 Beauchamp-Pryor 2012 p.292).

However, what was not clear from the findings was whether the enabling student attributes existed prior to, or because of being at university. However, as studying at university is known to require more emotional and physical time and effort for disabled students, it is possible that these attributes developed to address the barriers experienced in learning. Interestingly, Tinklin & Hall identified in 1998 that students' experiences in HE were dependent on the level of awareness of the staff about disability, so it is unsurprising that when students are open and honest about their visual impairment and are unafraid to ask for help that their experiences are better (Ashcroft et al 2009, Bishop & Rhind 2011). There were clear benefits in enabling learning for my participants where staff were approachable and accessible, and where students were confident and assertive.

Strategies and adaptations to provide access to the curriculum were clear enabling factors in learning, supporting Konur (2006) and Bishop & Rhind (2011). It was unsurprising to find that the participants benefited from specific resources that met their individual learning needs such as large font or prior access to slides and resources on their institutional VLE which meets the guidance of Morgan & Houghton (2011), Atkinson et al (2010) and QAA (2013). However, what was very clear in my findings was the importance of being involved in learning, particularly in practical classes, being the model. Again, this finding cannot be considered alone as being a model in class requires self-awareness and confidence, and the ability to push themselves forward. One participant joked that he *"got good at using his elbows!"* (P2). This also relied upon the staff being open to using the student as the model; some staff purposely chose the participants to demonstrate on. The participants all found being a model useful, for reasons of proximity to what was being taught, and so that they could feel what was happening as well as seeing and

hearing (Brandsborg et al 2001). Owen-Hutchinson et al (1998 p.256 & 257) recommended this practice to enable learning in practical sessions in their book, however, since then there has been no research literature that discusses this, presumably due to the absence of physiotherapy specific literature about visually impaired students. It was interesting that the participants recognised that other (non-disabled) students might also benefit from being the model, and were aware of that. This may suggest that making teaching more inclusive for visually impaired students would improve teaching for all (Owen-Hutchinson et al 1998, Hanafin et al 2007, Atkinson et al 2010, Madriaga et al 2010), supporting the notions of Morgan & Houghton (2011p.12) who suggest that “effective practice for one group can, and should, be effective practice for all”.

Other individual strategies related to independently making resources accessible, for example, using dictation software to make notes after class, or during independent study, or scanning information to be able to read it on a computer. Again, these strategies relied on the participants being self-aware and organised enough to put these strategies in place, enabling their access to the curriculum. There was a clear feeling of learning by doing, through experience, and having a go at finding out what helped, showing that these participants were resourceful and proactive. However, it was also evident that these independent strategies though beneficial, did take extra time and effort compared to a sighted student who would have immediate access to material or their own notes. Time and effort were identified as a clear barrier to participating and learning in this chapter, however, where *extra time* was provided as a reasonable adjustment, and support given to access learning materials, learning was again enabled and participation ensured. All participants benefited from extra time as a strategy and adaptation that enabled learning. However, this was only

discussed in relation to written and practical examinations, rather than coursework. It could be argued that considering the extra time and effort the participants put in with their studies that extra time in coursework would be appropriate. It is possible that the expectation to work to the same deadlines could even disadvantage a visually impaired student, which supports the findings of Fuller et al (2004b) and Hanafin et al (2007).

My findings showed that where students were well supported, were included and were encouraged to collaborate with their educators they showed skills of proactivity, problem solving and self-awareness that enabled their participation in learning physiotherapy. The findings outlined in this chapter support May & Felsinger (2010) who suggested that high levels of participation would generate a greater level of commitment and involvement from disabled students, confirming that shared and collaborative engagement between staff and students is vital to inclusion and a reduction in need for reasonable adjustments (BIS 2015). Perhaps, unsurprisingly, the academic staff who appeared to demonstrate care, support and empathy for the needs of their visually impaired students created enabling learning environments; upholding their legal, professional and moral responsibilities outlined by the Equality Act, the HEA (2013, Morgan & Houghton 2011, Porter 2012) and the CSP (2010, 2011). In contrast to the barriers discussed in section 6.5, the academic staff who enabled learning for these participants treated them as individuals and respected their learning needs, demonstrating the values of the physiotherapy professional (CSP 2011, Aguilar et al 2014, Hammond et al 2016).

6.7 Conclusion

These findings confirm the existence of factors that create barriers to learning physiotherapy within the university setting. The barriers prevented students from fully

participating and accessing the curriculum effectively, despite support and reasonable adjustments being put in place. However, in contrast, this study also reported many enabling factors for learning. My findings showed some excellent practices that ensured participation and access to the curriculum in both theoretical and practical teaching and learning. There was a strong 'human' and compassionate component to support across the enablers, where supportive relationships were key to success of support, reflecting the values of the physiotherapy profession. However, it was also clear that where students were open and proactive, and could ask for help, their support needs were met more easily.

The level of understanding about teaching and supporting visually impaired students using inclusive and accessible methods appeared to be diverse. Inclusive teaching and learning strategies optimise experience for *all* students, but ensure inclusion for visually impaired students. These strategies can be learnt and improved by staff with support from their institutions, however, like with the individual participants in my study, a varied and individual approach to address attitudes, skills and knowledge of academic staff is needed.

My findings support previous research into the experiences of disabled and visually impaired students in university, suggesting that the experience in physiotherapy is not unique. However, despite the physiotherapy profession being open and supportive of visually impaired therapists, there are still barriers that ultimately result in visually impaired students having to work harder and longer to access the curriculum to achieve their educational goals. Ironically, many of the barriers faced were created by staff who are members of a caring profession. However, what was clear was that if barriers were identified and addressed within the university setting

through collaborative, supportive and open relationships, learning was enabled and inclusive access to the curriculum and full participation in the classroom ensured.

CHAPTER 7: STUDY 2 (ROUND 2) - PRACTICE BASED LEARNING EXPERIENCES OF VISUALLY IMPAIRED PHYSIOTHERAPY STUDENTS

7.1 Introduction

This chapter discusses the practice based learning experiences of visually impaired physiotherapy students, presenting the data from the Round 2 interviews carried out with the participants recruited in Study 2.

7.1.1 Practice based learning in physiotherapy education

Chapter 2.5.1 and 2.6.2 outlined the professional requirements that student physiotherapists must meet, including a minimum of 1000 hours of supervised practice based learning. This is a core component of physiotherapy education (Skøien et al 2009, Thomson et al 2014), ensuring that students develop the necessary knowledge, skills, behaviours and values that are required of a newly qualified physiotherapist (CSP 2012). This must be integral to the programme of study at each university and must be carried out within a safe and supportive practice environment across a breadth of practice settings with a diverse group of people (HCPC 2014 5.1, 5.2 & 5.3). All placement providers must demonstrate equality and diversity policies in relation to students (HCPC 2014 5.5), which includes supporting disabled students.

7.2 Methods

Round 2 was carried out with the same four participants, the focus of the interviews was on practice based learning.

7.2.1 Refining the interview schedule

The specific development, pilot testing and use of the interview schedule in Study 1 and 2 (Round 1) have been described in Chapters 5 and 6. The interview in Round 1 proved very satisfactory and there were no issues with question format or process with the participants. This demonstrated that the pilot testing process in Study 1 had been appropriate and beneficial in data collection quality. However, the structure and wording of the interview schedule required some adaptation to ensure that it could gain data specifically related to the experiences of *practice based learning*. Some of the wording was therefore altered to reflect practise, however, the focus on barriers and enablers remained. The final version is in Appendix 14.

7.2.2 Accessing the participants and collecting data

Each participant was contacted by email to re-establish contact and to invite them to participate in an interview. The Round 2 interviews were planned for a minimum of 6 months and a maximum of 1 year after the Round 1 interview, to ensure that each participant had gained some (or more) practice based learning experience. This time the participants were offered the choice of a face-to-face or a telephone interview; only Participant 4 chose a face-face interview.

7.2.3 Collecting data using telephone interviews

Although Irvine, Drew and Sainsbury (2013) suggested that telephone interviews may be less effective, Cachia and Millward (2011) state that they are complementary. Several advantages of the telephone interview were identified; the interview was easier to arrange, the participants didn't have to organise a university place to meet and the timing was more flexible to avoid placements and exams as the participants were all geographically distant to the researcher, requiring no travel time (Cohen et al 2007).

Some of the disadvantages associated with face-to-face interviews such as interview effects and distractions were avoided (Cohen et al 2007). The participants and I had already met, and consent had been previously agreed, however the participation information and consent forms were sent by email to remind the participants of their rights (Appendices 9 & 10). The participants chose the time and place for their interview which meant they could avoid distractions by choosing a quiet time and place to talk. As the participants had already experienced the Round 1 interview they were aware of the process and the ethical dimensions of the study, and agreed for their call to be recorded. Trier-Bieniek (2012) suggested that telephone interviews may in fact generate more honest data as people are used to and are happier with virtual communication. She also suggested that sensitive subjects, which could have been discussed in these interviews about barriers in practice based learning for example, could be discussed more easily over the telephone. Telephone interviews have been used successfully to collect data from visually impaired participants; Douglas et al (2006) used telephone interviews to collect data for the Network 1000 project investigating the lives of people with visual impairments, and Reed & Curtis (2012) and Bishop & Rhind (2011) offered the telephone interview in their studies with visually impaired students.

The telephone interviews were conducted in my office, using an adapter to allow the telephone call and interview to be recorded with a digital recorder, allowing me to converse normally. Once consent had been gained, the conversation was recorded. Each participant provided a test sentence that was recorded and played back to prove that the recording system through the telephone was working effectively and the interviews commenced. Each interview was transcribed verbatim and sent by email to each participant for member checking (as per Chapter 4.9.5 and Chapter

6.4). No inaccuracies were identified in the transcripts. Data analysis was carried out with NVivo10 (QSR 2010), using the process identified in Chapter 4.10.

7.2.4 Practice based learning data from Study 1 and Study 2 (Round 1)

As identified in the limitations of Study 1, participants were not *specifically* asked about practice based learning, focusing only on university based learning. However, practice based learning was discussed in the Study 1 and 2 (Round 1) interviews as this was important and relevant to the participants as they prepared for practise (Thomson et al 2014); this data was therefore extracted and included within the data analysis from Round 2.

7.3 Findings

One of the changes made to the interview for this round of data collection related to the initial opening contextual questions about general experience of practice learning and the amount and variety of placements that the participants had gained. This enabled the participants to openly talk about their experiences and to provide context within the interview. A further important section considers preparing for practise placements and this is presented in section 7.3.2. The factors that created barriers and enablers for practice based learning are presented in sections 7.3.3 and 7.3.4.

7.3.1 Variety of experience

As the Round 2 interviews were carried out either in the following academic year or after the student's first placement, the varieties of experience were broad. P1 had completed all her placements, P2 had completed 1 placement in his 1st year, P3 had completed 2 years of placements and P4 was entering his 2nd year after a period of intercalation and had completed 1 placement. Both P2 and P4 undertook their first placements with elderly patients;

"It started off as really elderly waiting to either go home or to a home, but it started to broaden slightly. I already knew that it was of course the elderly, but I wasn't told there might be some stroke patients as well. I was happily surprised in a way because it broadened my horizon again." (P2)

"Generally we saw patients over the age of 80 … because they had suffered a fall…the prominent treatments were getting them from bed to sitting and then the more advanced ones from sitting to standing and then even a few steps around the corridors." (P4)

Participant 3 gained a broad range of experience across the main clinical divisions;

"I've done a two week placement in my first year and one five week placement and then, I've done another three five week placements since then. I've done two weeks' outpatients, I've done five weeks in respiratory, that was…surgical, respiratory ITU, I've done five weeks of neuro rehab, five weeks of orthopaedics and then five weeks of outpatients." (P3)

Participant 1 had completed all her placements and had gained a broad experience but felt there had been an over-emphasis on musculo-skeletal physiotherapy;

"…my first one was MSK outpatients…..then…rheumatology and outpatients, which was amazing. My second placement was stroke…and neuro, basically more stroke. Then my next one was just in a secondary MSK outpatients, so it wasn't actually in the hospital. It was in a GP surgery, so quite different to the first experience …. the first placement was very much kind of, you know, knee replacements and all that kind of stuff…. rheumatology, a lot of RA, OA, and I had the opportunity to run the hand class, which was obviously very specific to fractures and things like that, whereas the other one that I did was more -

there was a lot of psycho-social issues…..Then my next one after that was orthopaedic inpatients" (P1)

The participants experienced a wide variety of placement opportunities in most cases, but factors such as staff choice, proximity and familiarity affected where students were placed.

7.3.2 Preparation for practice

Prior to commencing their placement, two processes occurred; identification and allocation of placement, and then a period of preparation. In most placement allocations, there was clear collaborative working between the student and the university in the preparation for practice based learning;

"…we had meetings…me, my support worker, the placement person, organiser, and also the disability coordinator, who provides all the support and things at uni to kind of guide and help as well. So it was really mapped out." (P1)

However, this was not the case in her first placement;

"…the first year, they tried to do it like everybody else. They wanted to treat me the same. So I wasn't involved and they just allocated me a placement." (P1)

Participant 2 chose his first placement location purposely due to familiarity;

"I requested the placement to be done there. I really thought about where I wanted to do the placement…….I knew the people already….because I did about four years of voluntary work there. That helped…in the sense of adjusting." (P2)

Overall, there was clear guidance from the university about location, specialty and appropriate educators to ensure that the placement was accessible for both student and academic support where necessary;

> *"…they proposed the issue originally… they decided that they'd like me to have a placement quite close (to university) so it's a familiar route to get there, it's very straightforward…..they wanted me to be in a comfortable setting, somewhere that was familiar and somewhere that was close so they could visit if there was any kind of issues." (P4)*

Although there was a decision to keep Participant 3 close to university, the participant was aware that he still needed to gain a breadth of experience;

> *"they try and keep me as close as possible but because you have to do your different specialities…you're gonna have to go wherever you need to go to be able to do the specialities that you haven't yet done." (P3)*

For Participant 4, the decision to place him was made following discussion to reduce possible visual barriers;

> *"I really just said it was like reading obs, like any goniometer stuff, any stuff like that. So, they said they would kind of avoid an ICU placement if they could because there are a lot more wires and stuff to read.*" *(P4)*

There was a clear decision to ensure that Participant 1's practice educator was aware of her visual impairment;

> *"They spent the time to find the best educator……..they found out about specific educators that fitted the box of different areas…and got them to*

respond so that they were actually.. 'Yeah, I'd love to take this student on' ” (P1)

Once placements had been identified and allocated, the process of preparing began, again involving discussion between the students and university staff. This involved travelling to the placement location, meeting the practice educators and visiting the placement department or ward. The pre-placement visit was often suggested by the university, certainly for the first placement, and enabled the students to familiarise themselves with the placement routine;

“The clinical team suggested that I meet up with my supervisor, and whoever I’m going to be doing the placement with next year, beforehand. Just get kind of a feel for the place, like where everything is, so you don’t have to read much to know your way around, you just know your way around.” (P4)

This enabled the route and travel to be planned and practised, and the working environment to be seen;

*“Before all my placements I do a pre-placement visit, where I go basically to the hospital with a guy called ***** who’s my mobility officer from back home, just to have a look around, meet my educator, have a look around the department where I’ll be working, familiarise yourself with the environment. I obviously do the travel route from the uni to where I’ll be working…to suss that out.” (P3)*

The pre-placement visit also enabled the students to share their own learning needs and to identify possible barriers within the practice learning environment.

“…..just to discuss if there was anything that I’d anticipate that I might struggle with that they can do to kind of make things easier or just be aware of.” (P4)

However, this required the students to know how their learning would be optimised which was difficult;

> *"It was just kind of really thinking what might help me, really. I mean, obviously, I…you know, never had any, experience of working in a hospital, it was just really trying to think about things that, I might need, you know, trying to think about situations that might arise, and you know, what are my needs really." (P3)*

The same participant identified that he needed to explain about his vision, showing that he was aware of the possible issues on placement and that there might be some barriers to overcome;

> *"Telling them a bit about….what my vision is like, that's sometimes quite hard for people to understand…discussing, about my sight and what I can and can't see and, essential things that I might find a problem, I suppose. I think it's about preparing for the worst-case scenario, really, and then you've got strategies in place." (P3)*

7.3.3 Barriers to practice based learning

In general, the allocation and preparation for placement presented few difficulties for the participants and all felt well prepared. However, as placements approached and the participants started their practice based learning, barriers began to be identified. The following themes were identified; mobility and access, accessing patient information, time, unsupportive behaviours and using equipment.

7.3.3.1 Mobility and access

Travelling to and getting around the placement location caused concern;

"…..worry about public transport, buses, timetables, trying to find where you're going, missing buses because you can't see the numbers, all those kind of things. And getting lost in the hospitals...." (P3)

"..where the hospital is, how long it's going to take, where to actually go to meet in the hospital I think would just be another worry… just making sure you can actually get there and get there on time and get to the right place in hospital." (P4)

Accessing the patients' environment was also difficult;

"I think finding patients first… locating their beds and where they were on the ward……actually managing to walk through a ward with 6 separate beds to find the right person and talk to them in front of everybody else on a dead silent ward was something that was a bit of a challenge at first." (P4)

"…when you go in to see a patient…there's always things like their table and chairs and stuff in their bay, so it's just you know, scanning around before I first go in and seeing what I need to move out the way, before I start." (P4)

7.3.3.2 Accessing patient information

Accessing patient information was difficult as it was usually hand-written;

"…it was a bit of a struggle but I managed to read it but because it was a table of 10, 15 patients on a page…it's really small….you get eye strain and I had to focus really closely and it gives me headaches sometimes if reading that close." (P4)

Using observation to gain patient information created more difficulties;

"When I go in to treat a patient that's acutely ill….I won't be able to tell if they're experiencing problems, you know, by their facial expression." (P1)

Looking at x-rays was also challenging;

"X-rays were actually something I struggled with…..especially when you've got faint fractures and looking at lungs if you've got any kind of obstructions distinguishing even the slightly different colour shades…" (P3)

Participant 3 faced significant visual barriers on a placement, resulting in failure of a placement;

"….a sighted support worker was something that was illustrated was needed at this last place; it's been a big learning experience I think, and it's made me aware of what help is available, and, I feel….if everything like that is put in place from the start then I'm sure I'll be able to do a lot better on my placements." (P3)

7.3.3.3 Time

All the participants identified that time was a factor;

"I think my biggest worry was… reading patients' notes and being able to do it in the time limit that we were given before seeing a patient." (P4)

Participant 3 spoke at length about his experiences in practice where, in contrast to university, he had faced several barriers due to time;

"….to begin with we were just basically restricted to see our patients within, say, the hour or half an hour and then be writing our notes after, but then, as the placement went on we seemed to be aiming to get it all done within, like, half an hour, but it just wasn't really happening..." (P3)

However, the time barrier wasn't just about assessment and treatment, and this affected his progress and success on the placement;

> *"…realistically doing all of that within that time, it was just quite difficult. I'd never even thought about mentioning that at university I was entitled to extra time." (P3)*

> *"I was finding that I was marked down, on my timing when I felt, well, it wasn't really fair in the sense, like…goniometry, using physio tools, even things like locating equipment in the gym, you know, things always move about, you know, it's sort of hard to hunt things... there were quite a few things from a visual point of view that were bringing my grade down." (P3)*

Interestingly, the wards offered him more flexibility and time was not a barrier;

> *"…in in-patients it was never really a problem because you're not restricted to times." (P3)*

7.3.3.4 Unsupportive behaviours

Participant 1 experienced many more barriers because of unsupportive behaviours than the other participants. She faced negative attitudes even in the pre-placement preparations;

> *"..The head of department was very naïve, really, and arrogant to blindness…..I didn't realise this until I got onto the placement and started having problems, she (the placement co-ordinator) actually got quite concerned before I went onto the placement because of the attitude and what they were saying, which she wasn't aware of at first." (P1)*

There were preconceptions about where was “safe” for a visually impaired student to work, without any consideration of the student’s own abilities or experience;

> *“…they questioned about me even going to hydro, which actually is the best place for me, because it's a confined area and I know where all my patients are. But she said that I wasn't safe to do that.” (P1)*

> *“When I went onto that amputee placement, they were so worried, because obviously, amputees have got a high risk of falling, and it was like how on earth are you going to be able to manage that?” (P1)*

These preconceptions about safety due to impaired vision were compounded by assumptions that all visually impaired students were the same;

> *“I think that's because…. people may have known ‘Joe Bloggs’ who's visually impaired, but he was able to write his own notes and he was able to observe gait. And I think the [big question] was how on earth can she do that?” (P1)*

There was some distrust from the practice educators about the participant’s abilities;

> *“…. thinking well, even if she can do it, she's not going to do it properly. Do you know what I mean? I think that is the attitude.” (P1)*

> *“They were quite surprised that I could anticipate the patient’s needs.” (P2)*

Another educator suggested that because she was blind, Participant 1 should have *better* knowledge than her peers;

> *“…. he said, 'Well, if you can't see, you need to have that extra knowledge - like you need to know the width and the length of ligaments. You need to know the length of muscles so that you can properly visualise it.' And I said, 'No, that's not how it works.” (P1)*

There were inappropriate expectations;

> *"I was doing an eight, nine-hour day, then going home and I was up 'til midnight. I was waking up, getting up at three, four in the morning to do extra work and ******* said to me, 'Well, you can't do this.' I said, 'No, but this is what he expects.' I've never been like that before ever, crying that I didn't want to go into placement." (P1)*

Although the expectations were high, it was possible that this was nothing to do with the participant's sight;

> *"I think he was generally mean to all his students, but exceptionally mean to me because of the fact of my visual impairment …" (P1)*

Although this quote may reflect ignorance rather than attitude, it showed that barriers to learning were sometimes created by the educators;

> *"(They) don't always really understand exactly what I can and can't do and exactly what your eyesight is like. I've had educators ask me to pass them something or tell me where something is and they need to be a bit more specific rather than say "over there" where I'm not going to be able to see where they're pointing…" (P1)*

The final quote in this section identifies that unfortunately, at least for one participant, there was an expectation that barriers would exist;

> *"Whenever I try something new I always anticipate there's going to be something that I'm going to struggle with…I'm quite used to it…" (P3)*

7.3.3.5 Equipment

All the participants experienced difficulties with equipment;

"I think the hardest bit was probably on ITU…. you know, all the different attachments that patients might be connected to and, you know, where, what each one did and, you know, which ones are safe to, you know, get a patient up with and which ones, you needed to unplug or, be careful of touching." (P3)

"I did all the suctioning and all that kind of stuff…which I did find difficult, because when you can't see, sticking something in somebody's mouth…." (P1)

Inadequate access to equipment due to the environment affected the extent to which participants could treat patients;

"…anything kind of behind the patient's head on the wall. So, if they were on oxygen that was something that the educator did…I didn't really have too much interaction with oxygen masks or anything like that…" (P4)

Not being able to practise due to visual barriers may also have affected Participant 3's confidence;

"…lung x-rays, oxygen masks and gauges on the wall… I think it's just an area of physio that I don't feel is as strong as my other ones." (P3)

Although some hospitals used electronic patient notes, the utility of the software was problematic;

"I usually just have to enlarge them but… then you only get X amount on the screen and then…it takes longer because you're always scrolling to find where you are…. it's a struggle but it's a lot easier than having the paper copy..." (P4)

The use of physiotherapy software to create visual exercise plans for patients was problematic despite reasonable adjustments being in place;

> *"…my magnification software wouldn't work with physio tools so I just sort of had to get on with it, without any help… I was looking for a tiny white mouse and a weeny white screen was quite difficult. Yeah, so that was a bit of a nightmare." (P3)*

Use of electrotherapy machines created barriers, both in terms of time and with different makes of equipment;

> *"Using some of the machines, like the ultrasound machine or equipment in the gym, that sort of thing. I just need to familiarise myself with it before I use it….at uni I had to work it anyway, but from my point of view, being able to read it, it's much easier if I familiarise myself with it first, so I know what button does what." (P3)*

And using small equipment to measure joint motion was not easy;

> *"Goniometers they were using were like, very small print…a lot of the time you're trying to read it against dark clothing, so I always have to measure it then bring it away, read it, and then sort of line it up again so I can do the next measurement." (P3)*

7.3.4 Enabling practice based learning

This section presents the factors that enabled learning in practice based education. Analysis revealed the following themes; supportive behaviours, individual strategies and individual attributes.

7.3.4.1 Supportive behaviours

It was clear that an effective practice learning experience relied heavily upon supportive relationships between student and practice educator;

> *"…it's about picking the right educator and having a good intuition and a good instinct about who you're picking for the student and knowing what the student's like as well." (P3)*

However supportive relationships began before the placement commenced, between the university and the practice placement;

> *"They spent a lot of time teaching the educators beforehand, like different teaching techniques - and sharing their ways of teaching…" (P1)*

Participants 3's university was very proactive in terms of working together, putting him in contact with a visually impaired graduate student who suggested strategies that would be useful;

> *"…. doing the pre-placement visit and outlining a bit about my vision impairment and strategies that I should use, you know, when I'm on placement." (P3)*

Having an educator who was keen to educate, and who wasn't worried about the student's visual impairment was supportive and reassuring;

> *"one of my educators said, 'I want to develop myself and I want to have it from a selfish point of view,' she was absolutely amazing…she just had complete faith…. because she wanted to learn herself, she took the time to actually ask me and took the time to actually observe me and ask me how I do this… rather than assuming that I won't be able to do it." (P1)*

"……I usually went through them [the obs chart] with my educator because she was aware that I would struggle… It's nice to go through it with somebody, just because you have the reassurance as well as being able to actually read it…" (P4)

Working together with the practice educators to develop supportive relationships enabled participation in the placement;

"…when I'm on wards, things like signs…. I'd appreciate help if people just point them out. If they don't mind, that sort of thing…." (P3)

"I got all the PowerPoints emailed to me which was so helpful; being able to go home, refresh your memory without having to look at written notes or look up things. It was just…concise and in the right place and I found that really handy." (P4)

Some of the findings suggested that practice educators might have had some worries before taking a visually impaired student, but by working together the barriers could be overcome;

"…she had to sit and ask to learn or gauge any limitations that I've had…we discussed any kind of issues that I had. She said that she didn't think it would be too much of a problem and that she'd do whatever she could to kind of make things more comfortable so it was absolutely fine." (P4)

Even when participants expected there to be barriers on their placements, supportive collaborative working enabled them to be addressed;

…. it's a bit annoying when barriers do arise but then it's just about working with uni or your educator, whoever, you know." (P3)

7.3.4.2 Individual strategies for learning physiotherapy practise

There were many individual strategies identified by the participants to address the barriers they faced, enabling learning. However, this required participants to recognise the factors that created barriers in order to learn physiotherapy skills.

Working on the wards created environmental barriers but these were addressed by participants knowing their limitations;

> *"I suppose in-patients can be a bit more of a challenge…. when you see a patient… so it's just kind of look in, you know, scanning around before I first go in, seeing what I need to move out the way, before I start. So, I…just…adapt really." (P3)*

> *"something that I'd say that I don't find that easy, like on an X-ray, for example, I really have to get someone to look…to get someone to point on the screen because they're not always very clear, you know, where something is…. you know, what actually I'm looking at." (P3)*

Recognising that there would be differences in the hospital IT systems could have created difficulties for participant 4, but he was able to deal with the challenge;

> *"…. your eyes get tired so it's nice being able to just quickly enlarge something on a computer screen or…quick adjustments you can make like, moving the computer closer, sitting closer, just enlarging the font size while you type and then converting it back at the end for when you set up the notes." (P4)*

Identification of the individual factors that created the barriers and discussion with their educators enabled participation:

"…. because the beds always seemed to work slightly differently in a lot of hospitals so just familiarising myself ….how the bed goes up and down, bring the head up, that sort of thing." (P3)

Working with acutely ill patients created potential visual barriers which were recognised by participant 1 enabling her to deal with the problem safely;

"It's not imperative that I have a support worker looking over me, but with the acutely ill patient it is, because they can just change, their sats can drop and I might not be able to tell if there's no bleeps or anything like that…I need to be able to monitor all that kind of stuff." (P1)

Participant 1 identified that although she couldn't see, it was her responsibility to identify what was needed to make a clinical decision, and to gain it via her support worker;

"I would always direct them because… it's my job to remember what I've got to look for..." (P1)

Having insight into their own challenges in terms of the visual aspect of healthcare enabled the participants to think laterally, or to ask for help;

"Right, yeah, okay. I do have a problem with this, but I can do it like this. I can do it like this and now I can do this." (P1)

"…it's more a case of you need to ask." (P3)

Participant 1 recognised the importance of developing relationships with others to enable learning, especially because of her disability;

"I think it's important anyway to develop a good rapport, isn't it, with the different health professionals and liaise with them. But even more so when you are visually impaired." (P1)

Learning skills was enabled by experience, and 'having a go';

"Once you've experienced it and done it a few times…it's just getting over that first few times…it's a kind of challenge and it's just like learning how to do it isn't it?" (P3)

Participant 2 developed his skills at his own pace, knowing that he needed to take responsibility for his patients due to his visual impairment;

"I was slightly more careful in lowering and lifting, so as not to come down near a bed too bumpy in a sense. It was just easier to stop straightaway when necessary when I was slow." (P2)

Where vision created a barrier to learning a skill, tactile teaching and demonstrations were useful;

"I was asked by the physios to be 'hands-on'; to just put my hands and resist the pressure from the patient. However, I think I actually have learned as well to feel the different muscles, and that has helped me to feel and register what effects different exercises have." (P2)

"My educator assisted me to do it and showed me how - she kind of guided me as well, guided my hands how to do it." (P3)

"I think I learn best if I see something or help with something the first time and then afterwards being able to do it hands on by myself and then kind of honing any kind of technique that you need for it." (P4)

Having a neurology placement before the neurology module was a clear enabler for the development of practical skills for participant 1;

> *"If I hadn't had my placement first I think I'd have really struggled on the module because the fact that it's all about very specific moving and handling…. because I was having to be in different positions with patients and could learnt how to move patients side to side and how to tilt their pelvis and how to handle it helped. The theory after was ok, I liked the opportunity to try first…. having the placement before the module helped me to learn more ON the module than if I hadn't had that…" (P1)*

Observation and listening were also used to good effect to learn skills in practice;

> *"…I think that a lot of listening was done as well on my part. I saw a lot as well on how he used his hands as well. Like the main important things of how to create rest and peace, so people could open up and talk to someone openly without being threatened." (P2)*

Despite reasonable adjustments to enable learning, participant 1 acknowledged that, in reality, teaching a visually impaired student wasn't that different;

> *"…. they've got to spend extra time on thinking, 'Well, how am I going to teach this, when I would do it this way?' Nine times out of ten they just teach me the same way." (P1)*

7.3.4.3 Individual attributes

Several individual attributes that enabled individual learning emerged, showing the participants to be confident, motivated, adaptable and resilient. All the participants showed that they were confident in their abilities and their communication;

“I think you have to be more confident as a visually impaired person as well, because you - it's almost like selling yourself, because you need to! I felt like I had to always justify myself and always explain everything, which is good, actually, because it helps you learn.” (P1)

“I was very, very forward with all my educators. I developed a kind of relationship [with her], and she was like, 'Oh, if you just shut up, and let me speak for once!' that was the kind of rapport that I built with the majority of my educators, you know, you do need that”. (P1)

Participant 1 was also strong willed, especially when facing negative attitudes and inappropriate expectations;

“Oh, there's no way on this earth. I am not failing this placement …” (P1)

Being independent and confident was important where visual information was required;

“Even if there is a [x-ray] report I still want to look at it myself. It's basically me asking the appropriate question …. I had a little look at the x-rays and got them out for the support worker or educator to explain to me.” (P3)

The participants also had confidence to be optimistic about learning and could **adapt** where necessary;

“I wouldn’t say there was anything that I couldn’t overcome, anything that was like a big block.” (P3)

“…I only discovered that it was paper notes when I went for this pre-visit and then within a couple of days I just kind of accepted that that’s how they would do it and that’s how I’d have to do it as well.” (P4)

There was clear motivation and insight into their *own* responsibilities to learn;

> *"I'd note all the drugs in my notebook or any kind of abbreviations I had to learn and then I can go home and then on my laptop in a comfortable setting can learn them, note them down and take them back the next way. So, if I am not sure about something in the notes then I can open my notebook and see exactly you know what I need to quite easily." (P4)*

> *"…it's really a case of, you know, you've just got to learn, about what's available as you go through life, and then it's kinda down to you a lot of the time to, to approach the right people to get the help for it, really." (P3)*

Despite facing many barriers and inadequate anticipatory support that contributed to a failing placement, participant 3 showed his resilience and his motivation to take responsibility for his own future successful learning;

> *"There were quite a few things from a visual point of view that were bringing my grade down…...eventually I spoke to my uni about it and it was decided that we would defer my placement…...I'm going to redo it in the summer, and put all the strategies in place, so I'm going to disability (support) and the support service for allied health professions. Now that I'm finding out, what is deemed reasonable, in terms of time…...ahead of my next placement." (P3)*

7.4 Discussion

The findings have shown that for these participants, several factors created barriers in their practice based learning, despite having reasonable adjustments in place. There were also many enabling factors for learning in practice, facilitated by supportive educators. Where educators worked with individual students, whose attributes enabled their ability to work together, the factors that created barriers could

be recognised, and addressed, enabling participation in the practice learning placement, and fully supporting the notion of inclusive education (May & Bridger 2010, Morgan & Houghton 2011). This study is the first to show how these barriers affect participation in physiotherapy practice based learning, *and* how learning can be enabled.

The barriers consisted of participatory and environmental factors reflecting the domains of the ICF. Unsurprisingly most barriers were visual, affecting ability to carry out tasks or activities or fully participate in physiotherapy practice, however, attitudes towards the participants and their perceived abilities were also significantly disabling. The barriers faced reflected those described by Nolan et al (2015) and Ryan (2011) who identified that negative attitudes contributed to inadequate access to practice based learning.

This study also showed that despite an expectation that barriers would be present, the participants were well motivated, flexible and seemed able to problem solve when faced with possible or real barriers to participation on the placement. They showed insight into how best they learned and could apply their strategies from university to placement, making great efforts to work together with their educators. They all showed individual attributes that are required of student physiotherapists and developing professionals (HCPC 2013, 2016). They showed the ability to recognise their own barriers and through learning by doing, with supportive educators, address them proactively to enable successful learning. These findings support the work of Dearnley et al (2010) who identified in an exploration of experiences of disabled healthcare students in professional education that they demonstrated strong characters and a will to succeed.

A strongly positive finding was that the students in this study were very well prepared for their placements and were fully included in preparation and allocation. They had their own needs taken fully into consideration by their universities, meeting the recommendations of Owen-Hutchinson & Atkinson (2010), and supporting the findings of Nolan et al (2015), Hibberd (2011) and Heeley et al (2015). However, there were some specific barriers, supporting Reed & Curtis (2012) who suggested that visually impaired students face unique challenges, which are probably compounded by practice based learning. Getting to placements and finding ways around the placement environment (including wards, and patient spaces) created initial barriers, but were easily addressed by the participants. Although mobility had not been identified as a big factor in the university based experiences in Study 2, it was an issue creating additional concerns for the participants in this study, supporting Nolan et al (2015) and the findings from Study 1 (Frank et al 2014). This reflects the findings of Bishop & Rhind (2011) who identified that getting to and from campus was a barrier; the same principle created a barrier to activity and participation in practice based learning in this study.

Although Madriaga et al (2010) suggested that all students can experience barriers in their learning; it is likely that visually impaired students face additional barriers, and make extra effort and use more time to plan routes and to find their way around a hospital or a ward. The findings suggested that one of the factors that created access and enabled learning was *familiarity*; this may indicate that greater time to be inducted and settle into a new placement would be useful where it was identified by individual students. This was even though preparation for placement in this study was a significant enabler for the participants and showed good practice (Owen-Hutchinson & Atkinson 2010). By increasing familiarity within a placement, the

impact of the barriers to practice based learning may be reduced. This supports Dearnley, Hargreaves and Walker's (2010) recommendation that preparation for practise should recognise the *impact* of the student's *impairment* on a *particular* and *specific* placement, and reinforces the overall premise of individualising support in inclusive education (Morgan & Houghton 2011). Although preparation for placement was well planned, it may be improved with greater time and consideration of *individual and specific* students' needs before the placement commences. Additional time and effort required for other aspects of practice based learning can then be used more effectively on learning physiotherapy rather than mobility and getting around. Interestingly, Skøien's study (2009) into the experiences of sighted physiotherapy students identified that having sufficient time and space, and feeling welcome were important factors in practice based learning. This shows that, like Madriaga's study (2011) it isn't only disabled students who face barriers in their education, although it seems that the factors that create barriers are uniquely different for visually impaired students (Reed & Curtis 2012).

As I found in Study 2 (Round 1), the themes in these findings are not isolated; they are inter-dependent on each other. The time factor was an issue, particularly in out-patients where these participants did not appear to have reasonable adjustments in place despite them having extra time for reading in the university. The inter-dependence of time and reading factors was identified again, as time affected reading and visual tasks and vice versa, supporting Reed & Curtis (2012), Brandt (2011), and Roberts (2009). Although there was no issue with carrying out any aspects of assessment or treatment, where reading and observation were required, extra time was needed, but was not always provided. Interestingly the participants felt that where they could work more flexibly, for example on the wards, the time

issue did not create barriers to treating patients in the same way. However, the time needed to access patient notes created a barrier, and caused a great deal of anxiety, supporting Holloway (2001), Goode (2007) and Beauchamp-Pryor (2012) who identified the emotional 'burden' of disability. This was clearly shown by Participant 4 who was under a great deal of pressure created by inappropriate expectations of her educator. However, it is possible that the provision of reasonable adjustments is more difficult in the practice setting, especially when disabled students remain in the minority. Rankin (2010) suggested that establishing reasonable adjustment was compounded by the diversity of practice; however, this does not excuse poor attitudes and discrimination.

Skøien (2009) identified that students need to feel welcome within the physiotherapy team; it was clear that this did not happen for Participant 1 who faced negative attitudes and discrimination in placement (Nolan et al 2015). Although she identified that her sight was not the only factor in how she was treated, and that other (sighted) students had had similar difficulties, perhaps the distinctive barriers that visually students face are greater than for non-disabled students. Ultimately, Participant 3 identified that they were all individuals, with different learning needs;

"Everyone's sight's so different, two people are never gonna be exactly the same, everyone's different and everyone needs to find strategies that help them best, really." (P3)

In some instances, the participants showed greater insight into learning and into respect for individuals in inclusive practice than some of their educators. Inclusive education requires that students' impairments are considered within a holistic context of access and participation (Morgan & Houghton 2011). There appeared to be some discomfort with visually impaired students by their educators, reflecting the findings

of Lo et al (2017) in their study about the perceptions of physiotherapy educators about students' fitness to practice. This can be explained in part by staff development needs, identified as a challenge in ensuring inclusive education by May & Bridger (2010), and perhaps lack of experience (Lo et al 2017). However, the discrimination experienced by the participants fundamentally contravenes the values of the physiotherapy profession that require open attitudes, beliefs and values based in ethical practice (CSP 2011, Hammond et al 2016). Whilst Hammond et al (2016 p.75) clearly identify that tensions exist in practice, he suggests that a professional who can "understand, accommodate and assimilate a range of views and beliefs will be better able to serve"; be a better physiotherapist. Some of the experiences faced by the participants suggest that some practice educators were acting in a discriminatory fashion. Professional socialisation is where values of the profession are integrated, guiding students' practice (Aguilar et al 2014); students begin to create their professional identity over time with reference to the professionals they work with, and in the environments they work in (Maranon & Pera 2015). Skøien (2009) identified that students need to feel welcome within the physiotherapy team; however, it was clear that negative attitudes and discrimination in placement were faced (Nolan et al 2015). The participants were not always considered as individuals with specific learning needs, and faced discrimination and lack of respect, during supervised practice based learning with qualified physiotherapists. These were surprising findings as physiotherapists are bound by values that mandate ethical behaviour and respect for individuals, including students, within a duty of care (Scammell 2014, CSP 2011). By exploring learning experience in the practice based setting, and identifying barriers to learning that were, in part, created by practice educators, some uncomfortable findings that are inconsistent with our professional values and behaviours have been shown (CSP 2011). Patton et al (2013) clearly

advocates that physiotherapy educators must remain cognisant of their responsibility to not only educate future practitioners, but to transform the physiotherapy profession too.

Despite this, the participants were insightful and positive and took responsibility for their own learning, working collaboratively with supportive educators. It was very clear that the ability to work together and that having the confidence and the communication skills to do this enabled practice based learning, as it had done in the university based setting. The participants could recognise their barriers and could adapt and problem solve to find solutions, a key component of being a physiotherapist (Kell & Owen 2008 p160). Newton (2009) discussed the importance of finding individual ways of learning, and the importance of the influence of practice educators in nursing. Lindquist et al (2010) suggested that in physiotherapy, students learnt by doing, and using their hands alongside staff who were 'ideal discussion partners' to develop learning. My findings reflect these fully; the participants could develop their own individual ways of working, through experience, with open communication and a shared understanding of the responsibilities of learning (Ashcroft et al 2008). The importance of supportive and collaborative relationships has been reinforced by Hibberd (2011) and Rankin (2010) who maintain that these factors create successful practice based learning, and that embody the principals of inclusive education (Morgan & Houghton 2011, HEA 2013).

7.5 Conclusion

This chapter has presented the findings from the Round 2 interviews that explored the experiences of visually impaired students in practice based learning. Although the participants all experienced factors that created both participatory and environmental barriers, such as mobility, time, unsupportive behaviours and negative

attitudes, they were all able to address these through recognition of their limitations and collaborative and supportive working with their educators and support workers. It was also clear from the findings that despite some difficult experiences, the participants showed positive attributes such as insight, self-confidence, ability to ask for support and resilience.

This chapter has shown that, disappointingly, the potential barriers identified by Owen-Hutchinson and Atkinson (2010) in their CSP guidance document for disabled students continue to exist in practice. However, despite collaboration between the university, the student and the practice educator, some significant barriers in practice based learning were encountered by all participants. Many of these barriers could have been easily addressed through supportive and individualised practices, and with the provision of appropriate reasonable adjustments. However, this requires educators to be aware of their legal, ethical and professional responsibilities in supporting individual students, to ensure that practice based learning in physiotherapy is inclusive.

CHAPTER 8: STUDY 3 - GAINING THE ACADEMIC PERSPECTIVE

8.1 Introduction

To this point, the focus of my research has been on the learning experiences of the students through multiple case studies in Chapters 5, 6 and 7. At this stage, by approaching my professional colleagues, and drawing the findings together, a focus on inclusion within professional education is considered through the perspectives of those teaching visually impaired students in university.

This chapter reports the final stage of data collection; the process of sharing the summary findings from Study 2 Round 1 (university based learning experiences) (Chapter 6), with the course leaders of all current physiotherapy programmes in the UK. This final study provided external verification and different and independent perspectives of my findings, through triangulation (Newby 2014). It also helped me to contextualise the students' experiences captured in Studies 1 and 2 within a broader educational system. This data has primarily enabled the draft development of provisional recommendations to enhance the education of visually impaired students in physiotherapy (presented in Chapter 9), but that reflect more general implications for inclusion in HE.

8.2 Justification

At the outset of this research there was a need to identify the factors that created barriers and enablers in university and practice, to establish, maintain or enhance the support required or received by visually impaired students on their educational journeys into the physiotherapy profession. Chapters 5, 6 and 7 enabled me to form my conclusions and to summarise the importance of the findings from the

participants in my study; however, this did not feel complete. Within physiotherapy education, like in healthcare provision, there is a reciprocal and collaborative nature to support. The findings from Chapters 5, 6 and 7 have shown the great importance of supportive behaviours from academic and support staff in enabling successful education. Conversely they demonstrated how disabling poor staff support and engagement can be for students, and how this can negatively impact and disadvantage their education. It was therefore important to go back to those gatekeepers who provided access to the participants (and to those who may now have visually impaired students on their courses); as course leaders and academic staff provide support for visually impaired students they are optimally positioned to give their perspectives of my findings and their utility in the reality of the classroom.

8.2.1 Aims

To facilitate inclusive learning, it was important to share my findings and gain perspectives from those who provide physiotherapy education in the university setting. Additionally, two of the overall research aims (Chapter 1.3) required the involvement of academic staff for them to be achieved;

4. To illustrate how teaching and learning processes affect the ability to learn physiotherapy for visually impaired students
5. To use the findings to inform and facilitate accessible teaching and learning for visually impaired students in physiotherapy education.

Therefore, the *overall* aims for Study 3 were to:

1. Share my findings about university based learning experiences of visually impaired physiotherapy students with the course leaders of all physiotherapy programmes in the UK

2. Collect data to gain verification and clarification of my findings
3. Use the results and findings to develop in part, a series of recommendations.

8.3 Methods

To meet the aims and research questions for the overall research a final study to gather data about the perspectives of those leading physiotherapy education in the UK about my findings was carried out. As I was nearing the end of my studies, and the course leaders were geographically diverse, I decided to use a questionnaire (Cohen et al 2007). The questionnaire is the most widely used instrument to collect data in social and health research (Bowling 2005). There are several reasons that make it a suitable choice for collecting data within a case study, especially as many methods and sources of data are required (Thomas 2011 p.11). Cohen et al (2007) and Cano (2000) suggest that the questionnaire is easy to distribute, administrate and analyse, especially for a geographically disparate sample. The main disadvantages are time taken to plan the questionnaire and the potential for limited, unsophisticated data quality (Cano 2000, Bowling 2005, Cohen et al 2007, Bryman 2008).

Several authors have investigated the issues and experiences relating to disabled students in HE using questionnaires (Tinklin & Hall 1998, Borland & James 1999, Fuller et al 2004a, 2004b, Goode 2007, Miller et al 2009). However, Bowling (2005) suggests that the mode of distribution can have serious implications on the quality of data collected. Fricker & Schonlau (2002) and Cohen et al (2007) showed that although web-based and email surveys can attract lower response rates than postal survey, Miller et al's (2009) online questionnaire achieved a 35% response rate; compared to Fuller et al's (2004) paper survey that achieved a 29% response rate.

Although these response rates are low, the benefit of online methods may be balanced by accessibility to the questionnaire.

Web-based surveys have the advantage of being able to access a diverse population in the fastest and most convenient way (Cohen et al 2007), which may influence response rate. Web-based questionnaires are also instantly accessible by a highly internet-literate population such as academics (Millar & Dillman 2011). As web-based surveys are becoming more popular, are quick and accessible to complete, and can generate high response rates with healthcare professionals (Burgess et al 2012), Google Forms, a web-based questionnaire method was chosen.

8.3.1 Designing the questionnaire

This final study aimed to gain perspectives on the findings, to "close the loop" on the exploration of learning experiences in physiotherapy. As all questionnaires must be planned and designed to ensure the research aims can be met (Cohen et al 2007, Creswell 2009); it was essential to plan the most appropriate types of question to gain the best responses from the respondents. An initial draft questionnaire was composed using the themes from Study 2 (Round 1) (Appendix 16). Both open and closed questions were considered taking care not to make the process too burdensome or boring for the respondent (Bowling 2005, Denscombe 2014), which may lead to non-completion and resultant loss of important data. The use of fixed-choice questions (such as yes / no) that make a questionnaire quick to complete, facilitating flow through the questionnaire, were used to gather factual data about the respondents' perspectives on my summary findings. These questions contained predictable responses and were placed at the beginning of the questionnaire, as suggested by Cohen et al (2007), and Gillham (2000). For example, question 1 (see

Appendix 16) asked the respondent if they had had any experience of teaching visually impaired students. Question 2 asked if the respondent was surprised that unsupportive (staff) behaviours were barriers to learning giving a fixed choice response (yes or no). They were then asked if they would like to make any comments about the findings using open questions to allow clarification or comment (Cohen et al 2007 p.330).

Although fixed choice responses could have been used throughout, it was felt necessary to allow expansion and description to gain depth of answer and to allow the respondents to use their own words. Terms such as barriers and enablers from the ICF were used to ensure that there was consistency in the methodological approach and that the language used in the questionnaire reflected Study 2 (Round 1) and my research findings.

Some matrix style questions were also included, allowing respondents to rate how strongly they felt about the findings and their utility. The overall benefit of this type of question is that they allow greater choice than a purely yes/no answer, and are efficient in terms of space. For example, question 7 asked respondents to identify whether they could foresee any challenges in providing support. Although it has been suggested that these types of question may encourage respondents to choose mid-point answers (Cohen et al 2007 p.327), a choice “to some degree” was provided.

At the end of the questionnaire respondents were provided with space to add any further comments to identify any issues that they felt were important or that had not been addressed by the questionnaire. Cohen et al (2007 p.330) further suggests that the use of free-text may provide the respondent with a feeling of ownership and

greater responsibility for their answers. A copy of the final questionnaire can be found in Appendices 18 & 19, and through the link: http://goo.gl/forms/5S3KkIGDSW.

8.3.2 Pilot testing the questionnaire

Prior to distributing the questionnaire to course leaders it was pilot tested to avoid some of the risks associated with questionnaire studies (Cohen et al 2007 p.341). A systematic review by Weimiao Fan and Zheng Yan (2010) identified many of these risks; non-completion of questionnaires included layout of questions (too many per screen), length and progress of questionnaire, and inclusion of unnecessary questions (Fricker & Schonlau 2002). The pilot testing process involved sending an email with a link to the draft online questionnaire (Appendix 16) to academic colleagues and my doctoral supervisors. They were asked to view, access and submit their responses, and provide feedback on the utility of the online method, question wording, number of questions and ease of completion. Appendix 17 shows the feedback received.

The following changes were made following pilot testing:

- A specific yes / no question 1 was added at the beginning regarding the respondents' experience of educating visually impaired students
- The questions were re-ordered and shortened
- Some questions offered the choice to choose more than one answer
- More space was given for additional responses

8.3.3 Distributing the questionnaire

An email was sent to the course leaders of all physiotherapy courses in the UK (n=34) to update them on my progress and to ask them to take part in the final stage of my research process (Appendix 15). I chose to use the same contacts and email

addresses that had been used to the gatekeepers in the initial request for participants. Although it was very possible that the original course leaders had stepped down from these roles, or may have left their respective university, this was felt to be the most appropriate first step to triangulate the data; these “gatekeepers” had been involved in my study at the beginning of the process, and had answered my initial requests for participants and so knew of the study. However, I prepared for some reduced responses by additionally checking the names of course leaders on the internet, and by sending some additional emails. This ensured that all physiotherapy courses were contacted for their opinions and views on my findings. My email contained an introduction and a link to the web-based questionnaire. Two weeks was allowed for response and a follow-up email was sent the week of the deadline. This gave a further two-week deadline for completion of the questionnaire.

8.3.4 Ethical issues

As I identified in Chapter 6 the course leaders responded spontaneously to my initial request for participants by telling me whether they had any visually impaired students registered on their courses. The response to my request to participate in Study 3 could therefore be biased by their experiences. However, an advantage of the web-based method is that anonymity is provided where potentially sensitive information is being requested (Fricker & Schonlau 2002, Cohen et al 2007 p.333). As the questionnaire was distributed to some of the course leaders whose students participated, and who had had varied experiences, it was hoped that the questionnaire would facilitate honest and open responses, discouraging socially acceptable answers (Bowling 2005). Course leaders could also choose not to respond by simply deleting the email.

8.4 Results and findings

The anonymous responses were submitted electronically via Google Forms and the data downloaded into an Excel spreadsheet from where the data was analysed.

8.4.1 Response rate

The questionnaire was sent to the 34 institutions offering physiotherapy and 15 responses were received by the end of January 2016 (43%). Question 1 asked about experience of educating visually impaired students in the university setting; 10 (67%) had experience and 5 (33%) did not. Only 1 respondent had experience of more than 3 students over their career, 1 or 2 students was more common in the results.

8.4.2 Results

Question 2 asked whether the respondents were surprised that unsupportive (staff) behaviours was a barrier to learning. 27% (4) respondents were surprised, and 73% (11) respondents were not. Some of the free-text responses showed that there was disappointment by my findings;

> *"How disappointing that a profession which professes to enable people with disability can't practise that."*

But some were unsurprised;

> *"I wanted to say that I was surprised, but I'm not. I sometimes find that colleagues are supportive and empathetic with patients...but much less tolerant of disability related issues in peers."*

> *"I think staff plan for the 'standard' student, and if there are requirements outside this, it feels like additional work…. rather than see this as a way to improve their work, they see it as an imposition."*

However, some of the respondents made very pertinent points;

> *"I wonder what the students mean by unsupportive? Did the students perceive those staff as too busy? Not able to offer alternatives?"*

> *"When we have been working with a visually impaired student I feel the team have gone the extra mile. There is an issue with students' expectations…I feel sometimes students are unrealistic."*

Question 3 considered barriers in the learning space, such as rooms, lighting, space, and reliance on visual methods in teaching. The clear majority of respondents felt that these barriers could easily be overcome, with only 13% (2) considering that there would be some difficulty in overcoming them. The respondents were aware of these barriers and were supportive:

> *"First there needs to be commitment, inclusivity for all disabilities is not only possible but should be standard."*

> *"Creativity and working closely with the student, and keeping an open mind."*

Many solutions were offered, particularly for visual teaching methods;

> *"Learning resources can be adapted much more easily than the physical space."*

> *"Good practice would encourage repetition of things being written on the board."*

Practical classes could be adapted; *"through touch, demonstration through guidance."*

Again, there were some pertinent and honest responses which indicated inexperience, time and possible reluctance;

> *"There is a difficulty with our skill level, to adapt teaching environments and methods from what we have experienced and what other students in the cohort would expect."*

> *"The barriers to staff are often time. There is constant pressure on increasingly fewer resources."*

> *"I suspect …. we are talking about a small number…and staff therefore ignore? Forget? Or see changing for one student as an inconvenience?"*

One respondent identified that;

> *"The key issue here is disclosure; making the relevant people know without the student keeping having to tell them."*

Question 4 considered time and effort identified by the participants in their studies. There was 100% (15) agreement that needing and taking extra time and effort would affect a student's ability to succeed in their studies. The free-text comments strongly confirmed this;

> *"It is always a harder slog for disabled students."*

> *"The students have to work harder to make a situation work."*

> *"I imagine it is frustrating and exhausting."*

> *"…requires considerable effort on their part…"*

However, it was acknowledged that students' individual attributes would be a factor;

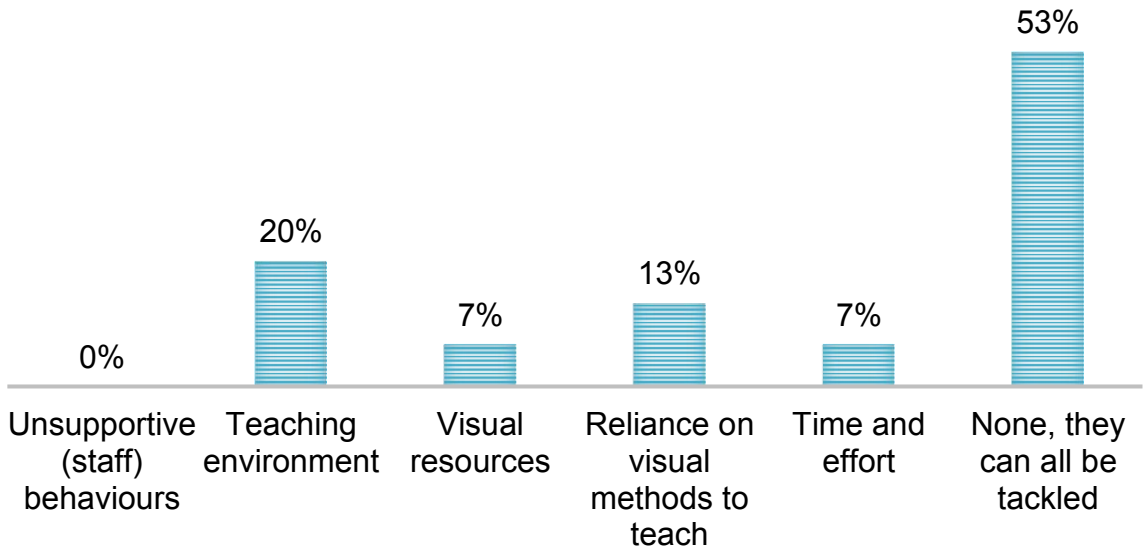
"At this stage…students will have devised mechanism to enable them to succeed" and *"students who come with effective strategies in place will have an advantage…students that have not established their methods of study will find it challenging."*

However, one respondent noted that;

"In my experience, with the appropriate support, they are more than up for the challenge that extra effort requires and often do extremely well."

Question 5 asked which of the barriers identified in Studies 1 & 2 would be most difficult to overcome; this is shown in Figure 5;

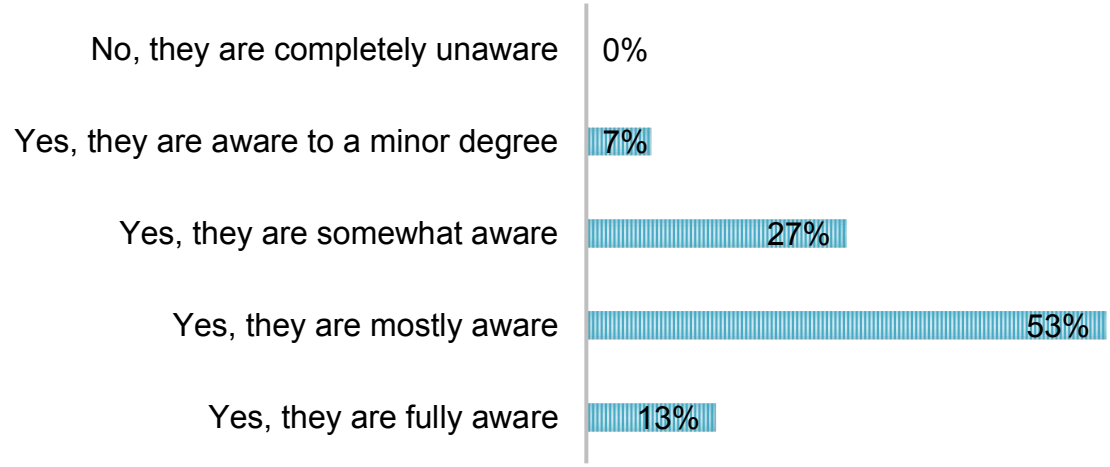
Figure 5: *What are the barriers most difficult to address in the university setting?*



53% of respondents felt that most of the barriers could be overcome; however, the teaching environment would be most difficult to adapt (20%). Only 1 respondent identified that using visual teaching methods and time and effort would be difficult to overcome.

Question 6 showed that all respondents felt that the academic staff in their team were aware of the potential barriers to learning for visually impaired students. However, there were differing values associated with this response and these are demonstrated in Figure 6;

Figure 6: *How aware are the staff about potential barriers to learning for visually impaired physiotherapy students?*



Question 7 asked respondents about the suggestion that "supportive staff behaviours, being accessible, approachable and proactive" were enabling factors for learning. 53.3% (8) of the respondents did not foresee any challenges in providing this type of support for visually impaired students, whilst the remainder (7) (46.7%) felt that there would be challenges, to some degree. The challenges were described as skill level, lack of experience, pre-planning and having pre-emptive discussions. Practical teaching was identified specifically by one respondent;

> *"Teaching of assessment skills will require some degree of consideration from those who have never experienced teaching partially sighted or blind students before."*

However, this comment suggested that there were good staff development opportunities;

"…our staff are accessible, approachable and proactive; however, the challenges really occur with skill level, balancing the needs of one while teaching many, having time to make the necessary changes and learning what those changes should be."

One respondent identified that the students also needed to take *"appropriate responsibility for their own learning"* which confirmed that the individual attributes presented in Question 8 were perceived by academics to enable learning. There was no surprise that attributes such as being open and honest, proactive and self-aware were enabling factors;

…. they need to be very motivated and open to succeed".

"We find that students who have specific learning needs are generally highly motivated problem-solvers."

"…the more a student shares with us the better we can respond"

However, it was clear that positive student attributes were not unique to visually impaired students;

"I would expect this from any student."

"This applies to any disability."

"This applies in any aspect of life where individuals have barriers to overcome. It enhances insight as well as encouraging supportive behaviours in others."

Interestingly, this question produced several suggestions that student attributes facilitated working together, in *"a two-way supportive relationship".* One respondent explained the importance of this shared working for both student and educator;

"The proactive organised students who have an understanding of their own needs often educate staff who are unfamiliar and point out obvious changes that need to occur."

These responses led into Question 9 which asked about challenges faced by staff in supporting visually impaired students. The responses confirmed that working together was important in the development of individual learning strategies;

"…the main challenge would be their [the staff] ability to be creative. If they [the staff] work with the student and student support, then this is achievable."

"…it's a 2-way process…staff and students can work together to facilitate a student's learning needs while ensuring they develop independent learning skills similar to their peers."

"Once a relationship based on trust and mutual respect is in place, our experience is that success is usually guaranteed. Our 'problems' (not a word I like) are often associated with students who have been less open/honest about their needs."

And that staff needed to consider students as individuals;

"My assumption would be that each student would need different things, so not assuming that one size fits all would be a good start."

"Not all strategies will be the same, they are specific to the individual"

"Support should be bespoke."

However, the fact that there were so few visually impaired physiotherapy students created a challenge;

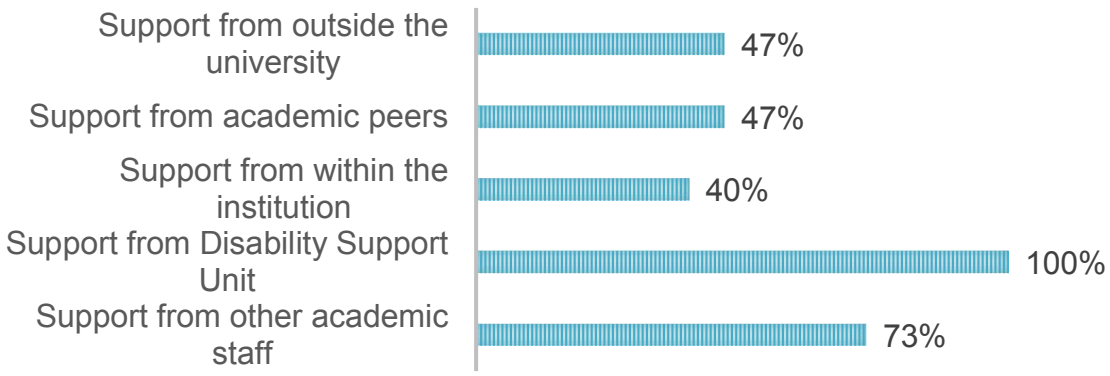
"…the fact that they are individuals and we that we don't have many students to maintain our skills."

The respondents identified again that students needed to take responsibility too;

"The main challenge is encouraging the student to be proactive."

It was clear that there was plenty of support available in the university to ensure inclusive teaching and learning. Having a close-knit staff team who worked closely with their students was a benefit for one respondent, whereas another identified that the support was there, but accessing it was difficult. Question 10 (see Figure 7) showed that staff felt well supported in a variety of ways, within and outside their HEI;

Figure 7: *Availability of staff support to educate students with visual impairments in HEIs*



However, there was a clear need for *additional* support for staff teaching visually impaired students in Question 11. 10% (2) said that additional support was needed, and 90% (13) suggested that (additional) support was dependent on each individual student's needs. Suggested required support from the free-text responses included;

- Facilitated peer support learning

- Staff development / training
- Teaching practical skills
- Access to resources and ideas
- Tie to create more accessible resources
- Awareness of the problems, barriers and difficulties for the students and strategies that could be used
- Exploration of attitudes

Two final points identified that in fact, physiotherapists should be in a strong position to support visually impaired students in university education, irrespective of their individual difficulties;

> *"Physiotherapists are by definition problem solvers and therefore should work around the issues and come up with solutions."*

> *"As an inclusive 'disability' aware profession surely we have no excuses to make in this area. We should include visually impaired students and support each student individually."*

8.5 Discussion

This study shared the findings about the university-based learning experiences of visually impaired physiotherapy students with the gate-keepers to gain external validation from physiotherapy academics in the field. Although the response rate was not unusually low for a questionnaire (43%) (Nulty 2008, Gale et al 2015), the percentage of those who responded with experience of supporting visually impaired students was high (67%). These results may be explained by Abreu & de Olivera

(2014) who suggest that online surveys access specific audiences, whilst personal interest encourages participation in online research (Keusch 2013).

Although there was some surprise that my findings identified that staff behaviours created barriers to learning, this may not be unusual; negative attitudes to disabled students and limited awareness of disability continue to exist in HE (Riddell & Weedon 2014). This may limit staff's ability to recognise students' needs (Madriaga et al 2011), creating the perception of poor attitude. My findings showed that although barriers existed for the student participants, the respondents agreed that they could, mostly, be overcome, showing that there is the potential for inclusion through support. However, it was clear that despite this, academic staff had their *own* support needs in relation to educating visually impaired students, with 100% of respondents identifying this. This may suggest that although the barriers in my findings were related to unhelpful behaviours, staff may be unaware, or may lack the confidence to support these students with inclusive teaching practices (Redpath et al 2013). However, an alternative explanation is less comfortable; it is possible that unsupportive behaviours were due to discomfort with the student group. Lo et al (2017) suggested that some physiotherapy staff were 'not trained' to deal with some impairments, and that there were fears of engagement with students with additional needs. Ironically, physiotherapists have a duty of care and are educated to assess, problem solve and to provide care within the ethical and legal framework of the Code of Professional Values and Behaviours (2011), and this applies to our students. Whilst addressing staff support needs in education are imperative to ensuring inclusive education, academic staff must also ensure that they do not (even by omission or error) discriminate against visually impaired students by failing to support their learning.

Several responses showed the importance of working together, supporting my findings, and supporting the practices of inclusive education (HEA 2013, Morgan & Houghton 2011, Porter 2012). It was clear that there needed to be open and honest communication about support needs, and that students needed to be considered individually, supporting Redpath et al (2013) and Owen-Hutchinson and Atkinson (2010). Indeed, some of the respondents felt that supporting a visually impaired student shouldn't be any different in that respect showing that physiotherapy education embodies the inclusion principals of equity and collaboration (Houghton & Morgan 2011).

All respondents were aware of the barriers faced by visually impaired students in physiotherapy education. It was pleasing to see that staff felt that the barriers could be addressed, but that the teaching environment and reliance on visual teaching methods were less easy to tackle. This supports research that has identified issues with lighting, buildings and mobility (Bishop & Rhind 2011, Curtis & Reid 2012) and that accessing slides, whiteboards, video and handouts create barriers to learning (Fuller et al 2004b, Bishop & Rhind 2011, Curtis & Reid 2012, Gee 2012, Redpath et al 2013).

The increased amount of time and effort that visually impaired students required was not disputed, in fact the respondents suggested that visually impaired students had to work harder, with motivation and drive to succeed. This relates to the need for students to be proactive, motivated and responsible for their own learning which was found in my research, and identified by the respondents, supporting Newman's idea of self-determination in identifying support needs (2015). My findings identified that individual attributes of participants enabled them to access and gain support in their education. However, this is unhelpful for less confident students, or those still

identifying their learning needs. Perhaps this is where the absolute need for individual student-centred support is most important (Redpath et al 2013). In fact, Newman et al (2015 p.216) suggested that there is a need for academics to work *more* intensively with disabled students to ensure they have accurate understanding of the effect of their disability on their learning. This supports my own suggestion in Chapter 6.5.3 and that of May & Felsinger (2010) that individual attributes (and skills to enhance learning in HE) need to be developed early through support in university, to enhance participation in learning. Hewett et al (2017) identified that visually impaired students do not necessarily arrive in HE with these skills fully formed, and physiotherapy students may also experience difficulties in transition to HE because of this, reinforcing the barrier of time and effort.

Visually impaired students are less visible in physiotherapy education now than they have ever been (Atkinson & Davis 2015). This may be one reason for staff inexperience and need for development identified in this study. One of the respondents suggested that if a student was in a minority of one, then it was possible that reasonable adjustments might be forgotten, due to a focus on the majority. This reflected my findings from Study 2 that classroom support was inconsistent, requiring students to remind staff, using extra time and effort to gain their reasonable adjustments. Since the RNIB School closed, the profession's expertise in educating visually impaired students has been diluted, relying on physiotherapy educators who may have little, or no experience in supporting visually impaired students. Maranon & Pera (2015) state that professional identity and professional socialisation occur in relation to a reference group of people, which may explain why academic staff felt unprepared to educate visually impaired students due to lack of experience and small numbers.

Although working with any student with additional needs requires greater time and effort for staff, the specific nature of visual impairment and the reliance on visual teaching methods and practices in physiotherapy continues to create barriers. Even though these barriers can be addressed through creative, collaborative and inclusive learning practices, there remains a clear need for (timely) specific staff development, due to the minority of visually impaired people choosing physiotherapy recently. Staff development has been identified as key to the success of inclusive education within HE (May & Bridger 2010). It is ironic that the Allied Health Professions Support Service that offered specialist support for both staff and students with visual impairments and other disabilities closed in 2013 (McMillan 2012).

8.5.1 Limitations

The timing of Study 3 was problematic; the preparation of the questionnaire and pilot testing took longer than expected. However, it was important to ensure that the online questionnaire was fit for purpose and would gain the breadth and depth of responses needed to provide the external validation of my findings. The questionnaire was distributed to the course leaders towards the end of the autumn term, and in the last two weeks of teaching for most universities. This may have affected the initial completion rate for the questionnaire. A further limitation of the questionnaire was that I did not ask what the academic role of the respondents was. Although the questionnaire was sent to course leaders, it was impossible to know whether the questionnaire was forwarded to and completed by other academic staff.

8.6 Conclusion

This chapter has presented the findings from Study 3. The university based learning experiences from Study 2 were shared with course leaders to gain external validation, and to contextualise the students' experiences within a broader

educational system. There was broad agreement with my findings relating to the existence of barriers, and the additional time and effort that visually impaired students put into their studies. It was also clearly indicated that the teaching environment and the reliance on visual teaching methods were most difficult to address. However, the latter could be addressed through staff development which was identified as a specific need when teaching visually impaired students. It was also clear that visually impaired students were in a minority, and that this created some concern for inexperienced staff needing to deliver effective and inclusive physiotherapy education. However, overall, there was clear accountability and commitment towards supporting visually impaired students within a culture of inclusion.

CHAPTER 9: DEVELOPING MEANING FROM THE RESEARCH

9.1 Introduction

This chapter brings together the evidence that I have collected and interpreted through my research journey. It shows the connections between the three distinct studies, producing meaning within my case study as I explain how my research questions have been answered. I draw from Thomas (2011 p.212) who states that an important outcome of case study research is that of 'abduction'; making a judgement concerning the best explanation for the facts that have been collected. I begin by examining the summary findings of the three studies, considering how the experiences of the participants answer my research questions. I then consider the importance of the findings, how my research contributes to theory, considering the broader literature about disability, learning and inclusion, more specifically in relation to physiotherapy. I conclude with a series of recommendations to facilitate inclusive physiotherapy education across both university and practice settings.

9.2 Overview of the thesis and integration of the three studies

This thesis has presented three separate studies within a case study "wrapper" (Thomas 2011) that have, together, explored the learning experiences of visually impaired physiotherapy students in HE in the UK. Study 1 was a pilot study, using a participatory approach to collect data from three known visually impaired physiotherapy students about their learning experiences. Study 2 was a nationwide study, accessing participants via gate-keepers from all UK universities that offered physiotherapy as a degree subject. This study explored the *university based* learning experiences of visually impaired physiotherapy students, and their experiences of

practice based learning. Study 3 provided an opportunity to triangulate the findings about university based learning by sharing them with course leaders using an online questionnaire.

The following sections summarise my findings. They show how my research questions have been answered, providing meaning from the case study about the learning experiences of visually impaired physiotherapy students.

9.3 Summary findings of the three studies

9.3.1 Studies 1 & 2

Analysis of data from Studies 1 & 2 identified the factors that affected learning, in university and practice settings, from the participants' perspectives. These findings aligned with the environmental factors from the ICF (discussed in Chapter 2.4), acting as either *barriers or enablers* to participation in physiotherapy education in both learning settings. The main themes are represented as either barriers or enablers in Figure 8:

***Figure 8**: Summary findings from Studies 1 & 2 in relation to the ICF environmental factors*

+ve factors that enable activity and participation in learning

Enablers

Study 2 (practice learning)	Individual strategies	Supportive behaviours	Individual attributes	Study 2 (practice learning)
Study 2 (university)	Strategies & adaptations (Being a model, learning by doing)	Being accessible Being approachable Working together Extra time	Student attributes (communication skills, being organised & self-aware)	Study 2 (university)
Study 1	Resources	Staff behaviours	Staff behaviours	Study 1
ICF factors	**PRODUCTS AND TECHNOLOGY**	**SUPPORT AND RELATIONSHIPS**	**ATTITUDES**	**ICF factors**
Study 1	Resources Time and effort	Staff behaviours	Staff behaviours Disclosure	Study 1
Study 2 (university)	Learning space Visual resources Time and effort Reading	Inconsistency Lack of insight Resources	Unsupportive behaviours (inconsistency, awareness) Teaching methods	Study 2 (university)
Study 2 (practice learning)	Access to patient information, using equipment	Access to patient information Unsupportive behaviours Time	Unsupportive behaviours Time Mobility	Study 2 (practice learning)

Barriers

-ve factors that create barriers to activity and participation in learning

There were several repeating and inter-related themes such as staff support, the learning environment, time and effort and issues in relation to policy and reasonable adjustment, creating a greater cumulative positive or negative effect on the students learning experience. There was a strong emphasis on the importance of 'people' and relationships between staff and peers alike in the creation of positive and negative learning experiences in the classroom and practice based setting. These relationships affected inclusion in learning, timely access to resources and support, and were influenced by the individual student's experiences and attributes.

9.3.2 Study 3

Study 3 shared the participants' university based learning experiences with physiotherapy education providers to gain external opinion and validation. There was broad agreement with my findings, confirming that visually impaired students faced significant **barriers** in learning created by academic staff, the learning environment, and time and effort; their learning experiences were far from inclusive. There was little surprise that staff behaviours and attitudes **enabled** learning and that working together with students who were open and honest about their learning needs, and who could share responsibility, enabled learning. It was suggested that the factors that created barriers were easy (in part) to address but that specific staff development needs existed in relation to providing inclusive education for visually impaired students (May & Bridger 2010).

9.4 Revisiting the research questions

9.4.1 How do visually impaired students learn the knowledge, skills and practices of physiotherapy?

For the visually impaired physiotherapy students in this research, the knowledge, skills and practices in physiotherapy have been learnt in both university and practice

based settings in a variety of ways, with a variety of positive factors (creating *enablers*) and negative factors (creating *barriers*) reflecting activity and participation to learning outlined by the ICF.

The participants learnt *physiotherapy knowledge* by:

- Recognising the impact of their impairment in learning
- Finding individual strategies and adaptations for learning
- Identifying their individual attributes (e.g. being proactive and organised)
- Using reasonable adjustments to access visual resources (books, handouts, slides) and teaching methods (such as individual demonstration, tactile models)
- Using assistive software
- Being the model in practical classes
- Being strategic with the additional time and effort required to study
- Working collaboratively with staff and peers

The participants reported a reliance on visual methods in teaching approaches which reflects the findings of Reed & Curtis (2012) and Bishop & Rhind (2011) who also identified that visually overt teaching created barriers. Proactive and organised students used individual strategies such as a laptop, or assistive software to individually access written text and slides, with a clear desire from staff and peers to help the participants access visual teaching material, both in practical and theory classes. The participants identified their own ways of learning which frequently required additional time and effort, supporting many previous authors (Holloway 2001, Magnus 2006, Goode 2007, Roberts et al 2009, Madriaga et al 2010, Brandt 2011 and Beauchamp-Pryor 2012) which contributed to their disadvantage. In terms of assessment, extra time was enabling, and this was negotiated, again reiterating

the importance of collaborative and supportive working relationships in enabling learning. Overall, participants worked closely with their peers and were happy to ask academic staff questions or for support which reflects the importance of good working relationships described by Roy (2003), Ashcroft (2008), Magnus & Tossebro (2014) and Heeley et al (2015) in relation to inclusion in practice learning.

The participants learnt *physiotherapy skills* by:

- Being shown skills individually by staff using tactile reinforcement
- Being observed
- Being a model
- Observing others
- Practicing - learning by doing
- Working together (with academic staff, practice educators, peers and support workers)

In practical classes, participants acted as models, ensuring they could see and / or feel what was being taught, before working with and practising on their peers reflecting the principles of access of Owen-Hutchinson and Atkinson (2010). They benefited from supportive academic staff who checked on them and offered individual teaching and clarification in class. They learnt skills in practice too, through 'guided participation' (Patton et al 2009 p.498) by working with practice educators and support workers (where necessary) in the practice setting (Kell & Owen 2009, Lindquist et al 2010).

The participants learnt *physiotherapy practices* by:

- Being in the practice based setting

- Recognising and dealing with factors that created barriers (e.g. mobility and accessing patient information)
- Using additional time to carry out reading tasks
- Being shown skills individually by staff using tactile reinforcement
- Practicing – learning by doing
- Working together (with practice educators and support workers)

The participants reported opportunities to practise skills learnt in university and to learn new skills whilst being supervised (Kell & Owen 2009, Patton et al 2009, Lindquist et al 2006). They identified factors that created barriers to learning skills, working collaboratively with their educators to find a solution (Patton et al 2013), reiterating the importance of being self-aware in the identification and development of adaptive strategies to enable learning. Learning by doing with tactile demonstrations and reinforcement enabled practices to be learnt, checked and improved (Brandsborg et al 2001, Owen-Hutchinson & Atkinson 2010).

9.4.2 What barriers do visually impaired physiotherapy students experience in learning?

Several factors were identified in the interviews that created barriers, in both settings, to activity and participation in learning that were mainly (but not exclusively) environmental (e.g. technology, environments, support and relationships, attitudes and services, systems and policies) (ICF 2001 p.29-30).

The participants identified that in the university setting; *the learning space, visual resources, teaching methods, attitude, inconsistency, awareness of support needs, and reliance on reading and resources* created the greatest barriers to learning, supporting many of the authors discussed in Chapter 3. Teaching methods, and how

teaching spaces were configured, caused problems. There was inconsistency of provision of accessible material, and students needed to either remind staff, or cope, either by adapting their own methods, being strategic, ignoring the information until exam time or by using their peers; all of which increased time and effort, disadvantaging the student. These findings showed that despite disclosing a disability, and being provided with reasonable adjustments, staff support was inconsistent (Claiborne et al 2011), not bespoke and sometimes absent, creating barriers to learning, supporting Bishop & Rhind (2011) and Reed & Curtis (2012).

In practice based learning, the following factors were identified by the participants as affecting participation and activity; *mobility, accessing patient information, time, unsupportive behaviours (attitudes) and equipment.* Inappropriate support and inadequate anticipatory adjustments were identified. Accessing patient information, getting around the wards and using equipment were all affected by visual barriers, requiring additional time. Despite reasonable adjustments, reliance on reading, and having limited resources in accessible formats meant that participants still experienced headaches and eye strain. Even converting written notes or handouts into accessible (e.g. audio) files required additional time. Further barriers were created by different principles to reasonable adjustments being applied in placement, either inadvertently or because they were not considered 'reasonable', despite the same factors (e.g. time) being present. Visual 'risks' in some practice areas such as ITU or hydrotherapy were identified, despite reasonable adjustments that would have enabled students to practise safely in those settings. Overall, the findings showed that preconceptions about visually impaired students affected attitudes, lack of trust, and inappropriate expectations, supporting Fuller et al (2004) who suggested caution when considering disabled students as a homogenous whole. Some of these

experiences echo those of visually impaired students in other studies (such as Bishop & Rhind 2011, Reed & Curtis 2012 and Claiborne et al 2011), however, this is the first study to specifically consider barriers for visually impaired physiotherapy students, describing the context specific and distinctive experiences that they face in their professional education.

In both settings, the participants reported facing unsupportive behaviours that align with the attitudinal, support and relationship environmental factors of the ICF. Attitudinal barriers from staff affected teaching, learning and access to knowledge, skills, practices and support. In Study 3, the staff identified that the provision of support was 'another thing to remember' and that the provision of [additional] support didn't cater for the majority; being different made individual support difficult. However, the academic staff in Study 3 were very much aware of the barriers faced by the participants and recognised the themes that I presented to them. They were aware that additional time and effort was put in by visually impaired students, and that they needed to be strong willed and driven to succeed; a finding that was clear in Studies 1 & 2. There was agreement that students needed to have their own strategies and to take responsibility for their own learning, suggesting the need for *shared and collaborative responsibility for learning*; taken seriously and consistently throughout academic and practice based education, reflecting some of the findings of Nolan et al (2015), Rankin et al (2010), Lo et al (2017) and Dearnley et al (2010). The need to collaborate, respecting the student's expertise in their VI reflects the notions of inclusion which could address the barriers that these students faced (Gov.UK 2017).

Although it is likely that some of the factors that create barriers to learning skills and professional behaviours are the same for all students, including non-disabled

students (Madriaga et al 2010, 2011) this research has shed light on some of the factors that can create potential barriers for VI students, like those reported by Reed & Curtis (2012) and Bishop & Rhind (2011). This again supports the importance of considering fully the impact of an impairment on learning (Dearnley et al 2010), as well as considering the factors that prevent or enable participation within the ICF. It was clear that, for the participants, studying to become a physiotherapist *was* hard; several distinctive factors were identified that created additional barriers to the process and experience of *learning,* the focus of which should surely be the priority for any student.

9.4.3 What are the individual strategies, factors or behaviours that enable learning physiotherapy for visually impaired student physiotherapists?

Although many barriers were reported that affected participation in university and practice based learning, these were addressed by enablers that were *individual in nature and were supported by staff and peers.* Where there was a supportive relationship between the student, staff and peers, and where learning needs were shared openly and honestly, learning was enabled, supporting Ashcroft (2008), Magnus & Tossbro (2014), Redpath et al (2013) and Kioko (2014). It was clear that for these participants, having personal attributes such as good communication skills, being organised and being self-aware helped them develop their own strategies and enablers for accessing the curriculum effectively. One of the main factors within the supportive relationships theme was the importance of being proactive. Where participants could alert staff to possible support needs, they were provided with sensitive and creative adaptations, enabling access in an individualised way. The participants were either self-aware from their prior learning experiences, or had

become self-aware in university (Hewett et al 2016), which appeared to enable them to take greater responsibility and to be organised.

As well as being able to work *with* the staff, it was also important that they could work *with* their peers. Learning physiotherapy is a social activity, especially in practical classes, as students learn on and with each other, working together (as discussed in section 6.5.2) to learn the hands-on skills of physiotherapy practice. There were several incidences of enabling learning between peers, where clarity was required for something visual, in a demonstration, or where collaborative practical learning was needed to prepare for an exam. Even though the participants expected to face barriers, and accepted that this was the case; they became "tangential thinkers", thinking, widely, quickly and appropriately how the barriers could be addressed. Overall, the strategies and adaptations that enabled learning relied heavily on the other enabling factors being in place. For example, having good relationships with staff and peers, and having positive attributes such as being organised, being self-aware and being proactive all ensured that the strategies and adaptations enabled learning, reinforcing the inter-dependence of the enabling factors.

To support students by ensuring that they can access the curriculum effectively, there was a clear need for them to be treated individually in this research. These findings support Warren (1994), Healey et al (2006), Curtis and Reed (2012) and Frank et al (2014) who suggested that all students have *individual and different* experiences with *individual* support needs. *Being an individual* with specific needs and attributes and *being treated as such* by staff clearly enabled learning for the participants in this research.

9.5 Considering the case study - perspectives from the whole

By considering the themes from each of the three studies in Chapters 5-8, I identified that there were some shared barriers and enablers that were consistent with each context; from the university and practice settings and from the perspectives of the university educators. The barriers and enablers reflected people and their values, places, and time and effort; these themes influenced learning for the participants in this study.

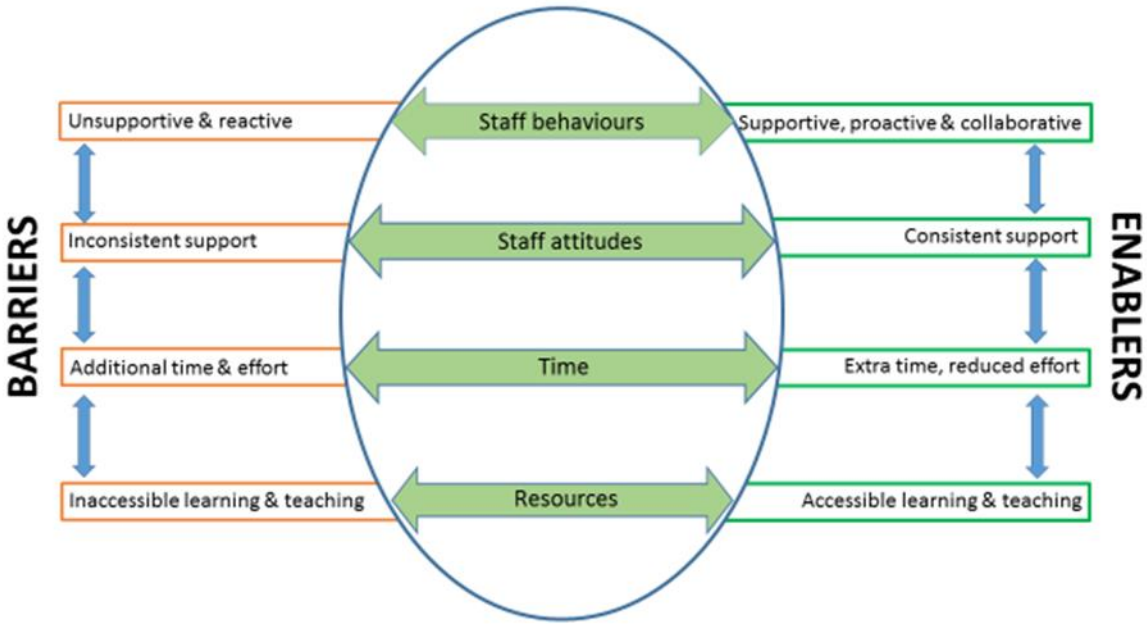
9.5.1 The inter-dependence of barriers and enablers

Returning to the definitions within the ICF discussed in chapter 2.4 provides some explanation of my findings; the ICF (WHO 2001 p.9-10) states that the factors which cause 'activity limitations and participation restrictions' (e.g. barriers) can be removed by the implementation of 'facilitators' or 'enablers' which is what my findings have shown. Figure 8 (section 9.3.1) identifies the environmental factors that affected participation in learning physiotherapy; positively (as an enabler) or negatively (as a barrier). However, this represented the factors in a rather binary and linear fashion.

In both university and practice settings, the themes were similar; barriers and enablers were closely related. One of the most prominent environmental factors in my overall findings was behaviour (supportive or unsupportive) which is considered within the ICF as an attitudinal factor. For example, staff behaviours could be enabling (supportive) or unsupportive (creating barriers). Solutions to many of the factors that created barriers relied heavily on a 'human' element, with close and honest working relationships between the student and the other people involved in their education. The impact of staff on the participants' learning experiences was huge; they were the key to enabling access to learning and conversely to preventing

learning where resources and teaching practices were inaccessible. They could create a supportive learning environment by being available, approachable, and by their words and actions responding to individual student's needs. This was linked to attitudes in relation to consistent and inconsistent support, which affected the provision of resources in the classroom. Conversely, being inaccessible or not providing appropriately accessible resources in a timely (and consistent) fashion, or using inaccessible teaching methods, language, and practices, the learning environment would become unsupportive. Where support was reactive, inconsistent or non-existent, additional time and effort by the student to gain access to learning to ensure participation was required, adding to the 'emotional burden' of being a disabled student. These findings confirmed that there was inter-dependence between the factors, shown in Figure 9 by the blue arrows:

Figure 9: *The inter-dependence of factors that affect the learning experiences for the visually impaired physiotherapy students in this research*



9.6 Considering the case study - perspectives of the whole

This research considered the learning experiences of visually impaired physiotherapy students within two contexts; firstly, these students were learning a profession, whilst gaining a degree, within the context of HE, and secondly, they were gaining a professional qualification that enables membership of the CSP, and registration and licence to practise with a professional regulatory body (the HCPC). By considering the themes from each of the three studies in Chapters 5-8, I identified that there were barriers and enablers consistent with each context; in university and practice settings and from the perspectives of the university educators. The barriers and enablers reflected people, their values, places, and time and effort; influencing learning for the participants in this study.

Successful participation in both contexts are complimentary and enable degree level attainment, and status as a chartered physiotherapist. However, barriers in professional education for these students, created in part by physiotherapists in HE and practice, and through exclusion and limited access to learning prevent successful participation, may prevent qualification as a physiotherapist for a student who is perfectly capable of becoming one (French 1988). The impact of this research, and its original contribution can therefore be considered through both professional (physiotherapy) and educational (pedagogical) lenses.

9.6.1 Interpreting the case through a professional lens

The themes from the findings of all three studies showed that there was a strong, clear and consistent *human* influence of physiotherapists on disabled students' physiotherapy education, both within the university and practice setting. The positive influence of physiotherapists in support and education both professionally and educationally was great, and was important in the experience that the participants

had. A significant focus was identified throughout all three studies in my research, by students and by the academic staff in Study 3; the human aspect of supporting a visually impaired student, and the importance of working together was clear.

Physiotherapy as a profession utilises a 'whole person' approach to health and wellbeing, which involves people in their own care, through education, awareness, empowerment and participation (CSP 2013). Whilst this specifically relates to patients in this context, the values that physiotherapists hold apply to people in general, including students. As physiotherapy students are educated by physiotherapists the caring and compassionate aspect of support that was evident in my research may be directly related to the people who chose careers devoted to helping others. This should not be surprising as physiotherapists are, by nature, and profession, caring people; they are *healthcare professionals*. Indeed, this is clearly stated in the Code of Professional Values and Behaviours (CSP 2011); sections 3.1.3 and 3.1.4 identify that physiotherapists respond to individuals compassionately and sensitively (being aware of individuals' vulnerability or potential vulnerability) and show empathy with individuals' situations and circumstances, working effectively with others.

The CSP's recent strategy and vision for 2017-202 (CSP 2016) is for physiotherapists to "transform lives, maximise independence and empower populations" with its mission to empower physiotherapists to exert their influence in society. Empowering students was recently indicated in the Gov.UK (2017) policy briefing in relation to facilitating inclusion, so there is a clear inference for physiotherapists to be responsible for diversity, skills, behaviours and knowledge in their educational practice. There is further guidance and support for our personal and professional values and behaviour in terms of our responsibilities as

physiotherapists; section 4.3 of the Code (CSP 2011) identifies the need to provide learning opportunities by creating appropriate learning environment and cultures through sharing and facilitating learning. For the visually impaired participants in my studies, this was demonstrated to a limited degree, or was inconsistently provided.

In 1988, French stated that the presence of disabled physiotherapists might undermine traditional professional values and beliefs. Some of my findings suggest that the participants' experiences were not consistent with professional values and behaviours of physiotherapists, and did not reflect well on the profession, supporting French's fears. The themes in the three studies showed that there were negative attitudes, lack of awareness, and mistrust of visually impaired students, and unsupportive behaviours in both university and practice settings, which was supported by the comments from the academic staff in Study 3. Acknowledging the small sample, all participants in my study failed a placement or withdrew due to difficulties and all experienced unsupportive, discriminatory and challenging situations with inappropriate expectations to some extent.

The impact of this influence was striking, and featured within the other themes as I discussed in Chapters 6 and 7. For example, although time, effort and accessible resources were clear themes in my findings, and in that of previous authors (Holloway 2001, Goode et al 2007, Bishop & Rhind 2011, Reed & Curtis 2012, Claiborne et al 2011, Hewett et al 2017), it was frequently the people (mostly physiotherapists, both working in academic roles, and in practice learning roles) that caused the necessitated extra time and effort for the participants, through poor attitude, insight or lack of desire to help, by not making anticipatory adjustments, or by providing inconsistent resources, or support. All physiotherapists, regardless of their work setting, or role, seek to understand an individual's needs and wishes, and

behave in non-discriminatory, non-oppressive ways (CSP 2011 section 4). The CSP Code and the Corporate Strategy (2016) are written with patients and service users at the core of our professional practice; however, despite this being a small study, my findings suggest inconsistency in the application and adherence of the principles and values of physiotherapy educators towards student members of the profession.

Physiotherapists have a responsibility to behave ethically within professional and social contexts as they are advocates of the physiotherapy profession. They must work within their professional context (of the CSP and the HCPC) but also within a social context that reflects the learning needs of visually impaired physiotherapy students with respect to access and inclusion (CSP 2015 L&D principles p.5). In both university and practice settings, there were examples of perceived a lack of support for learning, which impacted on their ability to participate. The impact of this reduced the students' ability to become independent which is a principle of learning and practising physiotherapy as a student and qualified physiotherapist (CSP 2015 p.7). Hammond et al (2016 p.75) recently suggested that professionals who can accommodate, and assimilate a range of views and beliefs will be better prepared to practice; this could easily apply to the education of visually impaired students. Ironically, the physiotherapists in both academic and practise settings, who created barriers through negative unsupportive behaviours, were effectively contravening the values of the profession.

Collaboration between HEIs and practice educators is vital in the development of individual practitioners within an inclusive philosophy (Newton 2009, Ashcroft et al 2008). Preparation for practice between HEIs and the practice settings was excellent for all participants in Study 2, supporting Heeley et al (2015), and there was clear desire to gain insight into individual needs and to facilitate the provision of

anticipatory reasonable adjustments within legislative and professional requirements (OPSI 2010, CSP 2015). Indeed, students who are welcomed have better educational experiences (Hibberd 2011, Ashcroft et al 2008), and will participate better in learning (Laitinen-Vaananen et al 2007) and professionally, socialisation in practice exposes students to the behaviours and values that will develop them as physiotherapists (Anguilar et al 2014, Scammell 2014, Hammond et al 2016). The educators who enabled the participants, through engagement, interest and awareness and by providing flexible and appropriate support, without judgement, were modelling and demonstrating the values of the physiotherapy profession. In fact, I suggest that the physiotherapists who facilitated positive learning experiences in university and practice acted as the 'glue', linking and joining the other themes together.

9.6.2 Interpreting the findings through a pedagogical lens

Chapter 2.3 considered inclusive education in HE, discussing the legal and educational responsibilities to disabled students, and outlining the shift from access to inclusion for disabled students (May & Bridger 2010, Felsinger & Byford 2010, BIS 2015). More recently, there has been a drive to enable *successful* inclusion, considering not only participation in learning, but attaining important outcomes such as degree completion, and employment (BIS 2014). The principles of inclusive education facilitate the accessibility of learning for all, through multiple means of presentation, using different teaching strategies for different learning styles, and providing numerous opportunities for students to engage with teaching material (Izzo 2012). These principles reflect inclusive design for learning such as UDL (Rose 2000, Morgan & Houghton 2012), discussed in Chapter 2.3.3 that should, from the outset, accommodate the widest variety of learners, including disabled students.

UDL is consistent with learner-centred pedagogy, and reflects the social model of disability whereby the environment is adapted to ensure that disabled people are not disadvantaged. UDL also sits within a constructivist paradigm, where the ability to engage and participate is essential in creating a successful and positive learning environment. My findings support the need for inclusive principles of design for learning in all aspects of physiotherapy education; the dynamic interaction of collaborative and flexible learning in both university and practice based settings.

Although there is an overt move towards inclusion within individual HEIs, facilitated by changes to the DSA (BIS 2015) and the HEA (2015), my findings suggest that this shift is not so obvious in practice based learning. The principles of inclusive education (May & Bridger 2010) and inclusive design (Rose 2000, Morgan & Houghton 2012) can work effectively where a new module, or course is being designed and where these principles can be implicit. However, when students are engaged in practice based learning, where there isn't a specific 'outset' of learning, this may be problematic. Physiotherapy education has been in existence for many decades, and the variety of learners has changed significantly in that time, certainly in the last two decades with greater numbers of disabled students entering physiotherapy education (Atkinson 2015). Although there has been a move towards greater inclusion within HE, and evidence that some barriers have been removed (Oliver 2013), disabled students still face barriers and have poorer placement experiences (ECU 2016).

It is possible that there are differences in university and practice education in relation to teaching and learning physiotherapy. One possible explanation for this is that physiotherapists are physiotherapists; they are not teachers. Academic staff, employed within HEIs are influenced strongly by the culture of their institution and

are required to complete a teaching qualification such as a post-graduate certificate in education. All HEIs must demonstrate how they meet the needs of a diverse population, and there have been many reports outlining the policies that HEIs work within to improve teaching and learning in their institutions (May & Bridger 2010, Wray 2013, ECU 2016, OFFA 2017). Physiotherapy practice educators do not require qualifications in teaching, unlike academic staff, and their teaching abilities are influenced by the HEI that provide their student physiotherapists. As each HEI is responsible for educating their own physiotherapy practice education staff to meet HCPC standards, it is possible that inclusive pedagogical approaches to learning are not entirely implicit. In practice based learning, practice educators may not have the skills, knowledge or practices of inclusive learning that are intrinsic within HEI culture (Morgan & Houghton 2012, HEA 2015). They may continue to use teaching and learning practices (or 'norms') that have been traditionally used on placement, but that contravene the principles of inclusive design and inclusion (Rose 2000, Morgan & Houghton 2012). These may exclude visually impaired students in physiotherapy education. However, it is also possible that staff do not have the skills, or experience to adapt their teaching 'norms' unless they can first identify that their practices are not inclusive. Continuing professional development in physiotherapy pertains to physiotherapy, not education practices, so unless physiotherapists are aware of their limitations, they may not be able to improve their teaching practices to be more inclusive. The ECU (2016) may shed further light on this theory; the authors suggest that where there is normatisation (the use of 'norms' within physiotherapy education for example), there can be marginalisation of, for example, disabled students. These are students who "find themselves alienated and excluded by the learning and teaching norms of a discipline and/or institution" (ECU 2016 p.5). The minority status of visually impaired physiotherapy students is likely to contribute to them being

viewed as the 'pedagogised other' in physiotherapy education (Atkinson 2015). In relation to academic staff, who *are* exposed to inclusive pedagogy within their HEI, the findings from Chapter 8 identified that academic staff, still required development and support to teach visually impaired students, supporting Lo et al (2014) and Gov.UK (2017).

The enabling factors described by the participants demonstrated that academic and practice based physiotherapists were supportive and worked collaboratively with students. Indeed, the ECU (2016) stated that the key to redressing pedagogical norms that exclude disabled students was to work *with* students, and to engage with them in partnership learning; "by working in partnership, we are able to share good practice, manage expectations, provide awareness and development training (on both sides), manage information and guidance, and to interrogate each other's practices to ensure effective placement experiences" (ECU 2016 p.9).

Where the changing landscape in HE inclusive education does not fully reflect, or include practice education, there is scope for furthered inequality of experience for visually impaired students. This can be addressed by embedding inclusive learning principles within practice educator training, and through partnership between HEIs and physiotherapy practice staff to develop staff capability through time, recognition of learning needs and resource provision (ECU 2016).

9.7 Explaining the findings; considering theories and their relevance in my research

This thesis and its theoretical underpinning has evolved, as I noted in Chapter 2.6. My own journey and exploration of research within the three studies facilitated the development of my thinking, and understanding of disability, from the Medical

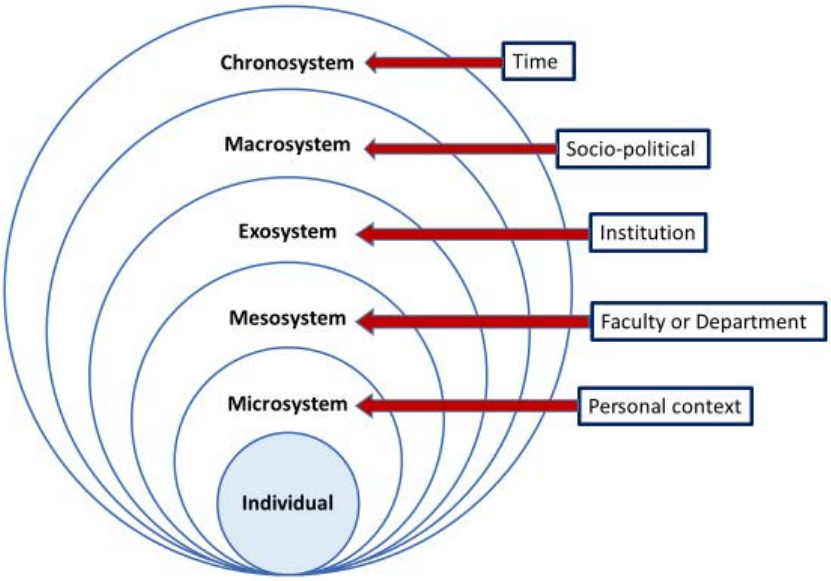
(Individual) and Social Models, to the ICF, and then much later in my Doctoral studies, to the consideration of the bio-ecological model proposed by Bronfenbrenner (2005) introduced in Section 2.6.2. This thesis has identified that many factors influence the learning experiences of visually impaired physiotherapy students, either negatively, as barriers, or positively, as enablers, reflecting the language of the ICF which underpinned the methods used in this research. My findings have shown that consideration of a participant's (visual) impairment and their specific and individual learning and support needs are essential in enabling inclusive learning. I have argued that these findings can be interpreted through both professional and pedagogical lenses as both perspectives are important in professional education such as physiotherapy.

The research questions in this study considered barriers and enablers in learning, however, my findings showed that within these, there were many important influences, occurring at different times and in different situations through the participants' courses of study. By only considering the findings in relation to the ICF, a linear presentation of the factors that affect learning may be implied, and this does not take into consideration other influences. I suggest that *time, individual need and development* of the student are important influences *within* and *across* the factors that affect learning but which are not clearly articulated by the ICF. The ICF importantly considers activity and participation, which was entirely relevant for this research, but it does not provide a focus on time or development of the individuals in question, whereas the bio-ecological model does. I therefore drew on Bronfenbrenner (2005) to further interpret my findings, placing the students and their experienced barriers and enablers to learning physiotherapy within a wider ecology of HE.

9.7.1 Considering a bio-ecological systems theory

Bronfenbrenner's bio-ecological systems theory (BST) (2005) represents the development of an individual using a series of concentric circles of influence, referred to as macro, exo, meso and micro-systems. Figure 9 illustrates the possible influences on HE based on May & Bridger (2010);

Figure 9: *A representation of Bronfenbrenner's bio-ecological systems theory*



Within a BST, the most proximal circles, such as the micro, meso and exo-systems have more direct influence and the most distal circles, less direct influence on the individual; a student in this case. The macro-system provides context, and offers indirect influence, and cannot be easily controlled within the system, for example the government, the law and the educational system. The chronosystem, relates to time, and the individual's own development through what Bronfenbrenner refers to as 'progressive mutual accommodation' (2005 p.107). He suggested that people did not develop in isolation, but within a system of relationships that are progressively more complex, and that are reciprocal, confirming the importance of inter-personal relationships. As described in my findings, the relationships and inter-linking between

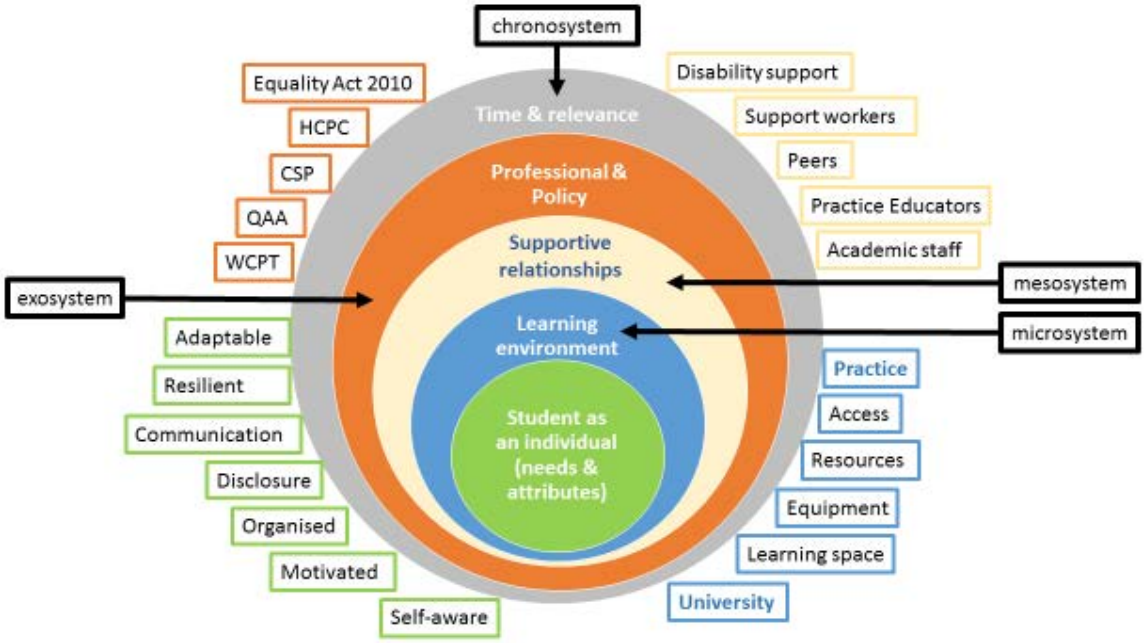
barriers and enablers was clear, and the BST provides a way of presenting and explaining the factors that influence a visually impaired student's physiotherapy education, with the addition of time which illustrates the process of development that is not a feature of the social model or the ICF.

9.7.2 Using a bio-ecological systems theory to illustrate my contribution to the literature

To present and explain the encapsulated learning experiences of visually impaired physiotherapy students (*the case)* in physiotherapy education I suggest that the student should be firmly placed at the centre of any support relationship, as illustrated by the bio-ecological systems theory (BST), and that the individual influences on learning, both positive and negative, should be considered when relevant, and over time. Learning physiotherapy is a fluid and changing process, influenced by the impact of individual circumstances, changing levels of relevance and support needs over time to enable participation (Hewell et al 2017).

By drawing on the BST, placing the student centrally within the educational experience, I illustrate how the factors from my studies, and the professional and pedagogical influences on physiotherapy education discussed in sections 9.6.1 and 2, are represented by the concentric circles of this model. Figure 10 identifies that each student's progress and success in physiotherapy education is influenced by the learning environment, supportive relationships (the people who provide and support teaching and learning), and professional and policy (the laws relating to disability and policies for inclusive education, and professional codes of conduct and standards of practise). This is shown in Figure 10; the coloured boxes refer to the themes identified within the three studies in this research providing a holistic and overarching view of the themes from the overall case study.

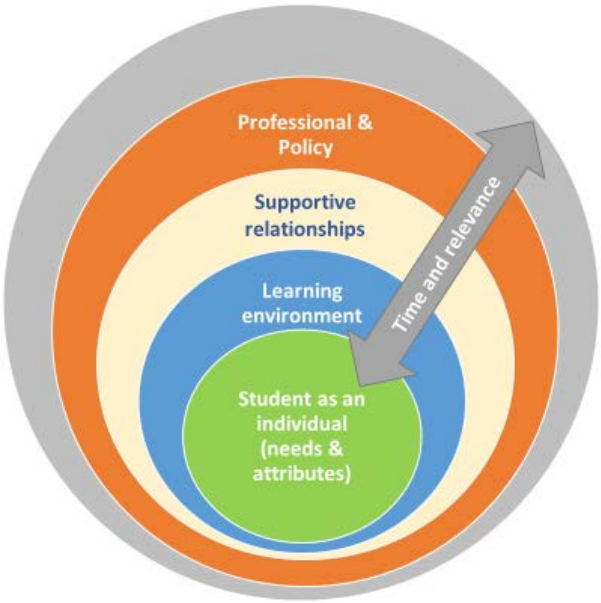
Figure 10: *The factors and influences in a visually impaired physiotherapy student's professional education*



'Progressive mutual accommodation', a central proposition of BST (Bronfenbrenner 2005 p.107) considers the progressive nature of learning. This relates to time, and development as a learner, and the mutuality pertains to shared experiences in learning; both of which featured heavily in my findings. The absolute importance of shared support within a collaborative and open learning environment enabled learning for the participants, and where this was absent, barriers to learning were evident, and learning was more difficult. However, the time element as the most distal circle in Figure 10 suggests that this encompasses the other factors, which may not always be the case. To illustrate time as a progression, rather than as an encapsulating influence, McLinden et al (2016) used an arrow to show the influence of the chronosystem which may illustrate learning more clearly. Like Hewett et al (2017), some of my findings showed that the participants did not necessarily have the skills to learn effectively in HE when they began their studies, and faced barriers of access to learning resources and use of technology. The more proximal influences

within the micro-system created a greater influence at the beginning of their studies, possibly disadvantaging them in their success, and perhaps preventing the influence of other systems beyond the micro-system. This may indicate a linear trajectory of success; however, this was not clearly indicated in my findings. What did appear to be relevant was the changing emphasis and inter-relations between the learning environment and the supportive (or unsupportive) behaviours, as I discussed in section 9.5.1, which were further influenced, more distally by policy and profession specific factors. Indeed, in relation to inclusion in HE, May & Bridger (2010) refer to the BST as a way of explaining development, proposing that development results from interactions between and across the influences on a student's learning. The circles of influence in the BST will change over the course of the students' professional journey, through education and beyond, at different times and for different periods. It was also suggested in my findings that in addition to time, the *relevance* (see Figure 11) and *context* of an influence, such as the setting for learning, or the physiotherapy lecturer or educator, can create barriers or enablers to learning over time, emphasising the individual and shared nature of student development. This is shown in Figure 11:

Figure 11: *The changing influence of time and relevance on the factors affecting visually impaired physiotherapy students' professional education*



Considering 'progressive mutual accommodation' in learning physiotherapy; the ecology of the BST in Figure 11 could also apply to professional development due to the interactions between the student, the HEI and the professional setting, dependent on where the student is on their course. The influence of professional and policy factors on the participants' learning is illustrated in Figure 10, and these have been discussed to some degree in section 9.6. However, whilst these are key in how students are treated and valued within the professional education, the strongest emphasis must lie with the physiotherapists who educate the students, both in university and in the practice setting. With the goal being qualification, membership of the CSP and registration with the HCPC, the need for all influencing parties to be responsible for facilitation of inclusive practices in learning physiotherapy is vital.

The next section discusses how learning can be enabled for visually impaired physiotherapy students.

9.8 Enabling learning for visually impaired physiotherapy students

This chapter has shown how my findings relate to established theory whilst considering what they mean in both professional and educational contexts. However, it is important to consider how this research can make a difference to future visually impaired students who choose to become physiotherapists, whilst addressing the call from the WCPT (2016) to engage more disabled people in the profession.

My third research question in Chapter 3.6 considered how learning could be enabled for the participants, whilst one of the broad objectives for this research aimed to establish best practice in teaching for visually impaired physiotherapy students. My research focused on a specific group, a 'case'; visually impaired physiotherapy students, using the language of the ICF to identify barriers and enablers in learning. Enabling learning in physiotherapy education must ascertain what makes the experiences of physiotherapy students distinctive. In one sense, they are just physiotherapy students, in another they are disabled physiotherapy students, specifically, visually impaired. To consider how learning can be enabled for this group of students, there are many levels of possible address; individual, institutional and professional, reflecting the inter-linking factors that are needed to embed inclusion within education (May & Bridger 2010, Morgan & Houghton 2011, Wray 2013, UDLL 2016).

9.8.1 The individual level

Enabling learning for visually impaired students involves collaborative working between two types of 'individual'; the student and their educator (either the academic or the practice educator). To enable learning, there is a need for specific, individualised support for *students,* but there are also support needs for *physiotherapy educators.*

9.8.1.1 The individual student

Individual students develop awareness of their support and learning needs and must be able to take responsibility for learning; there is an expectation that students upon graduation will be able to work autonomously. However, as Hewett et al (2017) acknowledged, students come to university with differing levels of skill, experience and knowledge, and may lack insight into their own learning needs. All students require some level of ongoing support, and this will change over time in line with Bronfenbrenner's concept of 'progressive mutual accommodation'. The individual ability of students to identify and address personal learning and support needs was shown in Studies 1 and 2, where, as 'experts' they identified the attributes, strategies and adaptations that enabled their own learning (UDLL 2106 p.11). Students need to learn how to learn within their personal and professional context in HE (Madriaga et al 2010, Hewett et al 2017). This reflects the importance of individual level of support for students within a culture of inclusion in an institution, identified many years ago by Tinklin et al (2004). My findings showed that students appreciated being treated individually, in relation to their specific impairment and learning related needs. To enable learning for individual students, unique support requirements for students with specific impairments should be identified, and addressed within an inclusive philosophy, considering the students as experts within their education (Gov.UK 2017, Dearnley et al 2010, Reed & Curtis 2012).

9.8.1.2 The individual physiotherapy educator

Enabling learning is dependent on the individual educator's desire to help and support disabled students, which is influenced by an individuals' own moral and ethical standpoint. There was strong and very clear evidence of positive support throughout my studies, confirmed in Chapter 8. Section 8.4.2 identified that there

were unmet development needs for staff teaching visually impaired students, supporting the findings of Lo et al (2017) who identified that academic staff still did not feel that they were 'trained' to deal with disabled students. Although the academic staff were not fully prepared or had the skills to teach visually impaired students, they did conclude that the barriers experienced by the students could be addressed. This implies that individual staff will have specific learning needs in academia and practice, and that to enable learning, they too must acknowledge that they are learning, with an openness to doing things differently (Gibson 2015). Educators may need to revisit their perceptions of disabled students, and their abilities rather than their disabilities, as the learning experiences of the participants in my study were influenced strongly by their academic and practice educators.

9.8.1.3 Working together to enable learning

There has been a clear shift from access, to individualised anticipatory reasonable adjustment, to a philosophy of inclusion for all students to ensure progress and success in HE (Felsinger & Byford 2010, BIS 2015, Gov.UK 2017). The key to this success appears to be collaboration (Gov.UK 2017). Recent guidelines from Universal Design for Learning Europe (2016) clearly identify that in best practice, educators must engage with students, and must value all partnerships. An optimal level of support for individual students can only be ensured where there is willingness and adequate preparation and support from academic and practice physiotherapy educators; there must be collaboration and dedication to enable learning in all settings. That said, the end-point of supportive and collaborative partnership working in physiotherapy education is in physiotherapy practice. The need for greater work to support staff to enable learning through 'empowerment of learners' has been recognised by the government recently (Gov.UK 2017 p.11).

Viewing the student as the expert in their specific impairment such as VI is one way forward (Gov.UK 2017). Empowering visually impaired students will develop empowered professionals, better prepared to progress their career, and to safeguard the profession.

9.8.2 The institutional level

The institutional role in enabling learning for visually impaired physiotherapy students reflects the micro (learning environment), meso (supportive relationships eg staff), and exo (policy) systems in Figure 10. HEIs must ensure that when students are admitted to university and a disability is disclosed, they are entitled to the same learning opportunities as their peers, and to receive anticipatory support to enable them to participate in learning (OPSI 2010, HEA 2013, Gov.UK 2017). My findings in Chapter 5 and 6 showed that this was not the case for the participants in my study; their rights to inclusive education were 'not enough' to ensure that learning was enabled (Gibson 2015). Whilst Oliver (2013) accepts that some of the disabling barriers to HE have been removed, the broader responsibility to ensure inclusive educational practices remains with the HEIs, and greater 'leadership from the top' is required (Gov.UK 2017 p.17).

Although inclusive whole-institution approach to designing, approving, monitoring and reviewing assessment strategies for programmes and awards, ensuring appropriate academic standards to encourage effective learning are mandated by the QAA (2013), and the HEA promote inclusive learning, academic practices within HEIs and within departments vary. This can be dependent on institutional policy, the student population, academic leads, and individual staff to establish inclusive learning in physiotherapy. The recent Gov.UK publication (2017) recognises that implementing inclusive curricula and practices in HE is an ongoing challenge, but

that inclusion can in fact provide many benefits for HEIs. Gibson (2015 p.876) suggests that this may be due to individuals and HEIs trying to make 'the other' (e.g. disabled students) fit into an established pedagogy.

However, Madriaga et al (2010) identified that students *without* disabilities experienced barriers to education and resources, so although there are specific and distinctive barriers for visually impaired students, they are not alone. Chapter 8 showed that despite accepting that challenges faced in the learning environment could be overcome, they still felt that they were not fully supported in their HEIs. This suggests that for the HEIs represented by the respondents in Chapter 8 at least, an inclusive and flexible learning culture was not evident. Enabling learning for visually impaired students can be achieved through inclusive cultures at HEI level; employing universal design principles can improve education for all (Gov.UK 2017). Alternatives, choice, flexible approaches to learning, and online learning resources reflecting UDL principles all enable inclusive learning which can be established within HEIs (UDLL 2016).

Ensuring an inclusive learning culture within HE would, arguably, reduce the need for purely individualised and more challenging aspects of support that the academic and practice staff felt unable or unprepared to provide in Chapter 8. However, even if HEIs' curricula reflect the principles of inclusive education and the rights of the students, can there ever truly be a fully inclusive curriculum for visually impaired physiotherapy students? Physiotherapy students are not unique in their skill and practice requirements for their profession, but they are distinct. Their professional education requires that skills and practices must be learnt, which may still present challenges in an inclusive curriculum. This relates to the 'progressive' and 'mutual' nature of learning, and the accommodations that might be needed in the classroom,

dependent on each student's individual needs. To enable learning, it must be acknowledged that students change over time, within a changing context of HE and practice, with different educators; their needs change as the demands of the course change. This relates to the most proximal circles in Figure 11, the micro and meso-systems and their interplay over time. Whilst many barriers can be addressed through inclusive educational principles and design, it is still essential to maintain the individual student and their own distinctive needs at the centre of their learning.

HEIs can facilitate inclusion in practice based learning, by improving awareness of disability in the profession (WCPT 2016), and underpinning preparation for practice educators with principles of UDL. These can be applied to the practice setting, supporting many of the enabling practices that I found in my research, which can improve experiences for visually impaired students (Heeley et al 2015). For example, preparation visits for placements and identification of expert educators who would structure, engage and motivate within practice learning (Thompson 2009 cited in Heeley 2015) would meet the philosophy of UDL, and enhance inclusion in practice. Specifically, in physiotherapy, the responsibility to facilitate inclusive learning for visually impaired, and indeed, all disabled students, should be shared between HE and professionals (Heeley et al 2015), but always underpinned with the values and behaviours of the profession (CSP 2011, QAA 2011).

Physiotherapy educators have a collective and shared responsibility to promote inclusion of disabled people within the profession, to reflect the population that they serve (Dearnley et al 2010). The HEIs that teach physiotherapy must lead on embedding a culture of inclusion for the student population, whilst individual physiotherapy educators must ensure that institutional and professional responsibilities are aligned.

9.8.3 The professional level

Difficulties of access to and success in the physiotherapy profession as a disabled person remain (Nicholls 2016, WCPT 2016), despite this being raised over many years by authors such as French (1988) and Atkinson and Owen-Hutchinson (2005). Although commended for its history of educating visually impaired physiotherapists (WCPT 2016), the UK physiotherapy profession has been criticised for its progress in inclusion (Nicholls 2016); the WCPT (2016 p.15) stated that the profession needed to make 'considerable efforts' to become more inclusive.

Ironically, before the RNIB School of Physiotherapy closed (French 1993), there was a long history of expertise in the education of visually impaired physiotherapy students. The opening of the Physiotherapy Support Service (PSS) in 1991 at the University of East London was influential in establishing support for visually impaired students transitioning into mainstream HE, offering advice, equipment, support and expertise to enable learning (Atkinson and Hutchinson 2005). However, the AHPSS closed in 2013, leaving a large gap in the provision of centralised, specific and individualised support, and a loss of expertise in physiotherapy education of visually impaired students. This loss has arguably affected the exo-system for the participants in this study illustrated in Figure 10, both students in Studies 1 and 2, and the academic respondents in Study 3. This section considers the importance of the exo-system, professional and policy, illustrated in Figure 10 in relation to enabling learning for visually impaired physiotherapy students.

The Code of Members' Professional Values and Behaviour (CSP 2011) sates that there is a professional responsibility for physiotherapists to educate students, and to treat *all* people, including students, with respect and as individuals. My findings confirmed that for the participants in this study, barriers to learning existed in

university and practice settings which included negative, possibly discriminatory and unsupportive behaviours from their physiotherapy academic and practice educators which are inconsistent with professional values. The Francis Report (2013) suggested that the 'right standards' were not embedded in care, resulting in some of the unacceptable values, behaviours and practices identified in the report.

To ensure that visually impaired students are enabled to learn within an inclusive learning environment, Greenfield & Jenson (2010) suggest that physiotherapists should reflect on their values and beliefs, holding their own values 'in abeyance' whilst exploring those of others, for example in student education. Physiotherapists (in academic and practice based education) should revisit the profession's codes, purposes and values within all aspects of practice, including education (Scammell 2014), and challenge the behaviours of others where these do not reflect the values of care, such as the 6C's (care, compassion, competence, communication, courage and commitment) (Cummings 2012, Scammell 2014). The enabling factors identified in Studies 1 and 2 illustrated the benefits of the supportive behaviours of academic and practice staff in enabling learning. Being open and sensitive to others' experiences and feelings ensures that education is guided by individual values and those of the profession that educators are instilling (Greenfield & Jenson 2010).

Inclusive education can only be established where there is HEI support and direction, and individual desire, skills and confidence to underpin teaching and learning with inclusive principles. From a professional perspective, the CSP, and the HCPC as the regulator, can facilitate inclusion through greater collaboration with HEIs. The recent WCPT briefing paper (2016) identified the need for consultation with professional bodies in relation to inclusive education, supporting proposals by the HEA (Morgan & Houghton 2011). Whilst there is evidence of an inclusive

philosophy with CSP and HCPC policy, to what extent this is devolved to HEIs and embraced by individuals who may choose (or not) to work towards inclusive education for all students, irrespective of disability, is unclear. To enable learning and ensure inclusion, physiotherapists must facilitate autonomy and independence in learning for visually impaired students, as our future colleagues and professional peers (Nicholls 2016).

The WCPT (2016) are, rightly, promoting physiotherapy as a profession for disabled people, however, education providers (in HE and in practice based learning) and employers must enhance their capacity to include disabled physiotherapists. However, there may be some cultural and professional barriers to inclusion that may stem from the profession as a whole. There is an ethical dimension of student education, where there is a responsibility to promote autonomy and beneficence, ensuring that education and support is always in the student's best interest, with the responsibility to "do the right thing" (Greenfield & Jensen 2010 p.88) for our students, and soon to be colleagues. However, this thesis has raised some questions about physiotherapy education; although our professional values respect difference in our patients and clients, the experiences gained by the participants may suggest that these values are not always extended to student physiotherapists. I conclude with a quote from an unknown contributor in Nicholls (2016) who states that;

"*a profession that aims to enable others should aim to enable its own*."

9.10 Recommendations

The final part of this chapter presents a series of recommendations that address the barriers that have been identified in this research, focusing on enabling influences on learning at an *individual, institutional* and *professional level* as highlighted in section 9.8. They support, and strengthen specific advice from the WCPT (2016 p.13) that

HEIs should ‘establish staff and programmes that provide streamlined services to students with disabilities once they are enrolled, including policies and courses of action for students…’.

Ensuring access to and participation in physiotherapy education is everyone’s shared responsibility. Visual impairment should be considered specifically with individualised support requirements for students to ensure inclusive education practices in physiotherapy, supporting the WCPT’s call to provide a ‘welcoming campus climate’ for student physiotherapists (2016 p.13).

9.10.1 Recommendation 1 – preparing to support a visually impaired physiotherapy student

It is recommended that;

- University teams should encourage academic and practice educator staff who *want* to support visually impaired students to take lead roles in support and advocacy
- There should be early identification of staff support and development needs in relation to inclusion, especially for visually reliant teaching methods (e.g. practical teaching)
- A culture of sharing experience and good practice between academic and practice based learning staff should be established.

9.10.2 Recommendation 2 – supportive relationships

It is recommended that;

- Inclusive learning practices include s*hared responsibility* to facilitate learning
- Academic staff initiate, develop and maintain supportive and shared relationships between themselves and students that are respectful, open, and accessible

- Early identification of a supportive tutor can lead and develop ongoing mutually beneficial discussions that are individual, proactive, consistent and responsive within an inclusive pedagogy
- There is acceptance that additional time and effort from *staff* may be required to provide inclusive education for all, including visually impaired students

9.10.3 Recommendation 3 – individualised support within an inclusive pedagogy that promotes student independence

It is recommended that;

- Students are encouraged early to identify their own perceived support needs
- Students are considered experts about their VI whereas, academic and practice staff can be considered experts in teaching and learning
- Collaborative working relationships are encouraged to identify and develop positive inclusive learning opportunities respecting individual attributes to enable lifelong learning and professional development
- Earlier (and additional, where necessary) time to enable familiarisation to the (practice) learning environment is provided to reduce anxiety.

9.10.4 Recommendation 4 – anticipatory reasonable adjustments across university and practice settings

It is recommended that;

- There is proactive discussion between practice and university to establish expectations of individual placements and the incorporation of reasonable adjustments, especially in relation to time for visually reliant tasks and activities
- The need for additional time and effort is considered for each individual, in combination with other reasonable adjustments, in all learning settings
- There is consideration of shared and inclusive pedagogies in practice educator training provided by the HEI.

9.10.5 Recommendation 5 – assurance of inclusion for visually impaired students within the physiotherapy profession

- The CSP should promote and ensure a culture of inclusion for visually impaired and other disabled students within the profession
- Inclusive methods of education should be overt in university and practice learning settings and expected during accreditation processes.

9.11 Conclusion

In this chapter I have drawn on the findings to examine each of the research questions. Taken as a whole, the findings show that although student centred learning within a model such as the BST is possible and exists, and that barriers can be addressed and enablers created, there are still some inequalities between university based learning and practice based learning in terms of inclusion. Despite historic calls for accessible and inclusive HE for disabled students, and the recent briefing paper from the WCPT (2016), barriers remain for visually impaired students created in part by their physiotherapy educators. There are many ways that this needs to be addressed in physiotherapy education, at an individual, institute and professional level by promoting inclusive education and by reflecting on the values and beliefs that physiotherapists hold about disabled students.

CHAPTER 10: CONCLUSIONS

10.1 Introduction

This final chapter presents my own personal reflections on the thesis, and summarises my contribution to the literature about the experiences of visually impaired physiotherapy students in HE in the UK. It also evaluates the limitations of the research overall, and makes suggestions for future study, concluding the thesis.

10.2 Personal evaluation

This research came from a strong personal interest and desire to ensure that visually impaired students could access supportive physiotherapy education. The process and findings of the research have impacted on my perceptions and practices of education, mainly in relation to a philosophical shift from 'access' to education to 'participation' in line with the ICF, and further in relation to the student centred BST. The findings have confirmed some of my feelings about experiences and about disadvantage, and for these participants at least, they must be incredibly disciplined, driven and dedicated to their profession to achieve; their journeys are complicated, stressful and demanding. I have also been reassured that despite this, their experiences have in part, been positive and that their learning has been enabled and supported. As a course leader in physiotherapy and as an admissions tutor, this process has reassured me that my personal principles of inclusion are clear, and that I can improve my practice and the experiences of visually impaired and other disabled students by acting on my recommendations at a personal and course level. By shifting from access to participation, my research has embodied the philosophy of inclusive education more fully, meeting students' needs for individual and anticipatory reasonable adjustments, by celebrating diversity, and considering

different approaches to learning within a culture of inclusion (Morgan & Houghton 2011, Gibson 2015).

10.3 Limitations of the thesis

There are, on reflection, some limitations in the planning and implementation of this doctoral research project.

The sample size of student participants was small, seven in total (three from Study 1 and four from Study 2), however, the sample in Study 2 was taken from a nationwide population, and the methods used ensured that the whole population was, as far as could be ascertained, accessed. It is possible that by asking course leaders to act as gate-keepers, my request for participation was not passed on to potential participants. In addition, and rightly, students were given the choice to participate or not, and this may have reduced the number of potential participants further.

Study 3 shared the findings from Study 2 (university based learning experiences) with the course leaders. It is acknowledged that this is a limitation as the findings from Study 2 also included practice based learning experiences. Therefore, the same process could have been followed for the practice educators, to gain their perspectives on my findings through triangulation.

A limitation of the overall research project was the choice not to carry out a longitudinal study. The sampling processes I used within my time frame only enabled me to access students who met my inclusion criteria. This meant that students could be in any year of study at the recruitment stage. It may have been optimal to recruit first year students, and follow them through their course; however, the timescale and small potential sample meant that this was not possible. However, this would have enabled me to consider and draw on the chronosystem from Bronfenbrenner's bio-

ecological model and its implication on the factors that create barriers and enablers in learning over time.

10.4 Further research

The completion of this thesis has revealed further research opportunities that build upon these three studies. One of the limitations above provides the first opportunity; sharing the findings about practice based learning with practice educators can establish whether they reflect the practice learning situation. As academic staff identified support and development needs in relation to university teaching, it is possible that this may be required in the practice based setting. The establishment of specific recommendations for practice educators in relation to supporting and working with visually impaired physiotherapy students is a further clear and achievable aim. A wider perspective for research might consider why visually impaired and disabled students continue to face barriers in their professional education, perhaps considering the attitudes of physiotherapists towards disabled people as their peers, rather than their patients.

10.5 Final thoughts

This thesis has presented a case study of visually impaired physiotherapy students, illustrated by their individual learning experiences in university and practice settings, validated in part by academic staff in the UK. It has shown that their learning experiences are similar to, but are uniquely different to other disabled students in HE. The participants identified barriers in learning, created by a range of environmental factors that limited inclusive activity and participation in physiotherapy education. However, where these factors were identified, and barriers to learning addressed through individualised, supportive, proactive and collaborative working, successful learning was enabled.

The experiences identified from the students' perspectives will improve teaching and learning in physiotherapy education, optimising experiences that visually impaired students have in both university and practice settings, *provided* that there is a student centred and collaborative approach to participation in learning that embodies inclusion. However, there was a suggestion that some physiotherapy educators in university and more often in practice education were discriminating against the participants in this research, reflecting values and behaviours inconsistent with physiotherapy professional practice. This may not reflect well on a profession that has a long history of accepting visually impaired students, but that may not have continued to move with current policy and practice (Nicholls 2016).

My recommendations are achievable and realistic, and I will, as an educator, act on my own findings in relation to how I teach and support visually impaired and other disabled students, individually and collaboratively. I am committed to disseminating these findings in the academic and professional literature. I have published Study 1 (Frank et al 2014) and presented conference platform (Frank 2015) and poster (Frank et al 2015) presentations to share my work from Study 2 with practitioners. I have also prepared two further draft papers at the time of this submission. Awareness, through research and practice, and acceptance that barriers to learning exist will ensure that learning and participation for future students in university and practice settings can be enabled, supporting the call from the WCPT (2016). Physiotherapy educators make an invaluable contribution, not only to student learning but to the learning of the profession; "the future of physiotherapy rests with those who prepare the next generation of practitioners to meet the challenges of delivering services in a complex and rapidly changing world" (CSP ePortfolio no date). Those responsible for physiotherapy education must share their visually

impaired students' journeys to ensure that their individual differences are respected and their voices heard.

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APPENDICES

Appendix 1 Interview Questionnaire Development v1

Question content	Justification	Reference source
Barriers & Enablers Teaching methods Environment (classroom / lecture theatre / fieldwork / clinical) Assessment Exams Academic & student life	DDA, SENDA Student's voice Considers barriers & enablers from perspective of the student	Fuller et al 2004 a&b (ESRC study) Tinklin & Hall 1999 Holloway 2001 Vickerman & Blundell 2010 Madriaga et al 2010 Healey et al 2006, 2008
Equipment provision & DSA	Requirement to meet reasonable adjustments	Holloway 2001 Vickerman & Blundell 2010
Why physiotherapy? (Pre) Entrance to HE	Impact of disability on choice of course, history of physiotherapy as an accessible profession	Tinklin & Hall1999 Fuller et al 2004 French 2006 Vickerman & Blundell 2010
Academic support & attitudes of staff	Effect of support on successful transition through HE	Vickerman & Blundell 2010

Appendix 2 Interview Questionnaire Development v2

Question content	Justification	Reference source
Barriers & Enablers 1. Teaching methods 2. Environment (classroom / lecture theatre / fieldwork / clinical) 3. Assessment 4. Exams 5. Academic & student life	WHO, DDA, SENDA, Equality Act Student's voice Considers barriers & enablers from perspective of the student	Fuller et al 2004 a&b (ESRC study) Tinklin & Hall 1999 Holloway 2001 Vickerman & Blundell 2010 Madriaga et al 2010 Healey et al 2006, 2008
Equipment provision & DSA	Requirement to meet reasonable adjustments	Holloway 2001 Vickerman & Blundell 2010
Why physiotherapy? (Pre) Entrance to HE	Impact of disability on choice of course, history of physiotherapy as an accessible profession	Tinklin & Hall1999 Fuller et al 2004 French 2006 Vickerman & Blundell 2010
Academic support & attitudes of staff	Effect of support on successful transition through HE	Vickerman & Blundell 2010
Contextual questions	Provides background for understanding of individual answers	Bryman 2001

Interview schedule

Thank you for agreeing to participate in this exploratory study investigating the learning experiences of visually impaired physiotherapy students.

(Consent, withdrawal, anonymity and confidentiality)

The interview is semi-structured so the questions I ask will be guided by a schedule but it allows us to discuss any issues that you think are important in further depth.

The interview will be recorded and typed up verbatim by myself; I will write up what we both say and you will be given an opportunity to check the typed up version to check that you are happy with what was said.

Do you have any questions?

I will ask you about your experiences of learning at university, in particular about any barriers and any enablers for learning physiotherapy. We are not going to specifically discuss your clinical practice in this interview.

Are you ready?

I will begin recording now and start the interview

1. How do you prefer your visual impairment to be described?
2. What made you decide to study physiotherapy? Did anything influence your choice of course? How did you choose where to study? Did anything influence your choice of institution?
3. Before you started the course did you have chance to discuss your VI with anyone? Did you want to?
4. What year of study are you in?
5. How did you find the process of disclosure?
6. How have you found learning to be a physiotherapist so far?
7. First of all, let's talk about learning in a lecture theatre, what are your experiences? How do you learn in a lecture? Are there any barriers to learning in a lecture theatre? What strategies (enablers) do you use to aid your learning in a lecture?
8. Could you give me an example of a positive and negative learning experience in the lecture theatre?
9. How about in a small group such as in a seminar? Barriers? Enablers?
10. Could you give me an example of a positive and negative learning experience in the small group setting?
11. What about in practical classes such as anatomy or physiotherapy skills? How do you learn best in a practical class? What barriers do you face? How do you address them? What strategies have you found useful?
12. Could you give me an example of a positive and negative learning experience in the practical class?
13. What about your own independent study? Are there any barriers in relation to that? Or particular enablers? How do you find access to learning resources? Specialist equipment?
14. How do you find written assignments? Practical exams? Other forms of assessment? Written exams?
15. Do your peers influence how you learn in any way?
16. Do the staff influence how you learn in any way?
17. What are the most important issues to you in learning physiotherapy?
18. Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy?
19. Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physiotherapist?

Appendix 3 Context questions and justification from the literature (following supervisor feedback)

~~How do you prefer your visual impairment to be described?~~ Felt not to be necessary here following d/w Chris & Mike. Possibly ask at end of interview for planned write up.	~~Tinklin & hall (1998) identified through their research that asking students how they would like to be described, or have their disability phrased was vital to respect the individuality of the participants.~~ ~~Goode et al (2007) suggested that identity was a key factor in "managing " disability in HE~~ ~~Panting & Kelly (2006) identify that a student's identity as either disabled or non disabled may influence their transition through HE~~
What made you decide to study physiotherapy? Did anything influence your choice of course?	Tinklin & Hall (1998) suggested that having a disability may influence choice of course and institution based on support or reputation. Richardson & Roy (2002) suggested that students in HE with VI were more likely to be male, mature and from an ethnic minority background. Wilcox,Kim, Curbow, Weber, Mark, Andrew & Dona Lee (2005)
How did you choose where to study? Did anything influence your choice of institution?	Holloway et al (2001) Goode et al (2007) Healey, M., Fuller, M., Bradley, A & Hall,T. (2006)
~~Before you started the course did you have chance to discuss your VI with anyone? Did you want to?~~ Not necessary as stand alone question here, will integrate in actual interview	~~Goode et al (2007)~~ ~~Atkinson & Owen Hutchinson (2010) CSP guidelines for supporting students with disabilities~~ ~~HPC guidance~~ ~~Vickerman & Blundell (2010) suggested that pre enrolment contact influenced the process of settling in to HE~~
~~How did you find the process of disclosure?~~	~~Borland & James (1999)~~

Not relevant to research questions.	~~Goode et al (2007) discussed the issues of disclosure in relation to accessing support in HE~~ ~~Vickerman & Blundell (2010) identified that some students found the process of disclosure uncomfortable, and some were fearful of disclosure~~ ~~Miller et al (2009) found that medical students were fearful of disclosure due to perceived potential for discrimination~~
Could you tell me a little bit about your visual impairment and your route through education before you started your physiotherapy course?	

Experiences of learning

How have you found learning to be a physiotherapist so far? What are your experiences of learning physiotherapy so far?	Lindquist et al 2004, 2006
First of all, let's talk about learning in a lecture theatre or formal teaching space. • What are your experiences? • How do you learn / participate in a lecture? • Are there any barriers to learning in a lecture theatre? • What strategies (enablers) do you use to aid your learning in a lecture? • Could you give me an example of a positive and negative learning experience in the lecture theatre?	Holloway (2001) focus on enablers in learning Tinklin & Hall (1998) and Borland & James (1999) identified barriers in teaching and learning Fuller et al (ESRC papers) (2004a) focused on experiences of learning in different environments
How about in a small group such as in a seminar or small group setting? • What are your experiences? • How do you learn in a seminar / small group?	Tinklin & Hall (1998) Vickerman & Blundell (2010) identified issues with lack of adaptation or access in the classroom

• Are there any barriers to learning in a seminar / small group? • What strategies (enablers) do you use to aid your learning in a seminar / small group? • Could you give me an example of a positive and negative learning experience in seminar / small group?	
What about in practical classes such as anatomy or physiotherapy skills? • What are your experiences? • How do you learn best in a practical class? • What barriers do you face? • How do you address them? • What strategies have you found useful? • Could you give me an example of a positive and negative learning experience in the practical class?	Tinklin & Hall (1998) Lindquist et al 2004, 2006
What about your own independent study? Are there any barriers in relation to that? Or particular enablers?	
How do you find access to learning resources? Specialist equipment?	Borland & James (1999) Holloway (2001) and Goode et al (2007) suggested that accessing DSA was time consuming and equipment difficult to obtain Goode et al (2007) specified that learning resources were not always accessible for students with disabilities Vickerman & Blundell (2010) identified a lack of access to equipment as a key barrier to learning
How do you find / what are your experiences of carrying out written assignments? Other forms of assessment? Written exams? Practical exams? Presentations?	Tinklin & Hall (1998) & Borland & James (1999) agree that support needs are not always met in terms of assessment processes

	Holloway (2001) suggested that accessing extra time or alternative formats for exams or assignments was a problem for some students Hanafin et al (2006) identified key issues with accessible assessment processes for students with disabilities Vickerman & Blundell (2010) 11% did not have their assessment needs met
~~(Do your peers influence how you learn in any way?)~~ This will be discussed if / when it comes up in each interview. It is not specific to the research questions but may be important to some participants	
~~Do the staff influence how you learn in any way?~~ This will be used as a prompt / secondary question in relation to specific aspects of learning	Borland & James (1999) suggest that communication difficulties between staff and students affect optimal teaching and learning Goode et al (2007) identified that staff attitudes could cause difficulties for students' learning Vickerman & Blundell (2010) identified that staff anxiety could affect the provision of support
~~(How do you provide feedback on your experiences of learning in your institution?)~~	Holloway (2001) Borland & James (1999)
What are the most important issues to you in effective and successful learning physiotherapy as a student with a visual impairment?	Student centred approach
Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy?	

If you could design a physiotherapy curriculum / course that would perfectly meet your own learning needs as a visually impaired student, what would it include? What would it look it look like?	
Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physiotherapist?	

Appendix 4 Draft interview schedule for Study 1

Preliminary questions

Research question	Interview question & prompts	Justification
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices?	What made you decide to study physiotherapy? Did anything influence your choice of course?	Tinklin & Hall (1998) having a disability may influence choice of course and institution based on support or reputation. Richardson & Roy (2002) students in HE with VI were more likely to be male, mature and from an ethnic minority background. Owen-Hutchinson & Atkinson (2010) Owen-Hutchinson (1994, 1994a) HPC (2007)
	How did you choose where to study? Did anything influence your choice of institution?	Holloway et al (2001) Goode et al (2007) HPC (2007)
	Before you started the course did you have chance to discuss your VI with anyone? Did you want to?	Goode et al (2007) Owen-Hutchinson & Atkinson (2010) Vickerman & Blundell (2010) suggested that pre-enrolment contact influenced the process of settling in to HE HPC (2007)
	How did you find the process of disclosure?	Borland & James (1999) Goode et al (2007) discussed the issues of disclosure in relation to accessing support in HE Vickerman & Blundell (2010) some students found the process of disclosure uncomfortable, and some were fearful of disclosure Miller et al (2009) found that medical students were fearful of disclosure

		due to perceived potential for discrimination
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices?	How do you prefer your visual impairment to be described?	Tinklin & hall (1998) identified through their research that asking students how they would like to be described, or have their disability phrased was vital to respect the individuality of the participants. Goode et al (2007) suggested that identity was a key factor in "managing " disability in HE Panting & Kelly (2006) identify that a student's identity as either disabled or non-disabled may influence their transition through HE

Main questions

Research question	Interview question & prompts	Justification
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices?	How have you found learning to be a physiotherapist so far?	Lindquist et al (2004, 2006) Fuller et al (2004, 2004a) Holloway (2001) Madriaga et al (2010)
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices? • What are the barriers and enablers of students with a visual impairment to learning physiotherapy?	First of all, let's talk about learning in a lecture theatre. • What are your experiences? • How do you learn in a lecture? • Are there any barriers to learning in a lecture theatre? • What strategies (enablers) do you use to aid your learning in a lecture?	Holloway (2001) focus on enablers in learning Tinklin & Hall (1998) and Borland & James (1999) identified barriers in teaching and learning Fuller et al (ESRC papers) (2004a) focused on experiences of learning in different environments Bishop & Rhind (2011) Owen-Hutchinson & Atkinson (2010)

• What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	• Could you give me an example of a positive and negative learning experience in the lecture theatre?	
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices? • What are the barriers and enablers of students with a visual impairment to learning physiotherapy? • What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	How about in a small group such as in a seminar or small group setting? • What are your experiences? • How do you learn in a seminar / small group? • Are there any barriers to learning in a seminar / small group? • What strategies (enablers) do you use to aid your learning in a seminar / small group? • Could you give me an example of a positive and negative learning experience in seminar / small group?	Tinklin & Hall (1998) Vickerman & Blundell (2010) identified issues with lack of adaptation or access in the classroom Fuller et al (ESRC papers) (2004a) focused on experiences of learning in different environments Bishop & Rhind (2011) Owen-Hutchinson & Atkinson (2010)
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices? • What are the barriers and enablers of students with a visual impairment to learning physiotherapy?	What about in practical classes such as anatomy or physiotherapy skills? • What are your experiences? • How do you learn best in a practical class? • What barriers do you face? • How do you address them? • What strategies have you found useful?	Tinklin & Hall (1998) Lindquist et al 2004, 2006 Fuller et al (2004a) different learning environments Owen-Hutchinson & Atkinson (2010)

• What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	• Could you give me an example of a positive and negative learning experience in the practical class?	
• What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	What about your own independent study? Are there any barriers in relation to that? Or particular enablers?	
• What are the barriers and enablers of students with a visual impairment to learning physiotherapy? • What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	How do you find access to learning resources? Specialist equipment?	Borland & James (1999) Holloway (2001) and Goode et al (2007) suggested that accessing DSA was time consuming and equipment difficult to obtain Goode et al (2007) specified that learning resources were not always accessible for students with disabilities Vickerman & Blundell (2010) identified a lack of access to equipment as a key barrier to learning Owen-Hutchinson & Atkinson (2010)
• What are the barriers and enablers of students with a visual impairment to learning physiotherapy?	How do you find / what are your experiences of carrying out written assignments? Other forms of assessment? Written exams? Practical exams? Presentations?	Tinklin & Hall (1998) & Borland & James (1999) support needs not always met in assessment Holloway (2001) accessing extra time or alternative formats for exams or assignments

		Hanafin et al (2006) issues with accessible assessment processes Vickerman & Blundell (2010) 11% did not have their assessment needs met Owen-Hutchinson & Atkinson (2010)
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices? • What are the barriers and enablers of students with a visual impairment to learning physiotherapy? • What are the individual strategies, factors or behaviours that enhance learning physiotherapy for students who have a visual impairment?	Do the staff influence how you learn in any way?	Borland & James (1999)suggest that communication difficulties between staff and students affect optimal teaching and learning Goode et al (2007) identified that staff attitudes could cause difficulties for students' learning Vickerman & Blundell (2010) identified that staff anxiety could affect the provision of support
• How do students with visual impairment (VI) experience learning in physiotherapy with respect to values, knowledge, skills and practices? • What are the barriers and enablers of students with a visual impairment to learning physiotherapy?	What are the most important issues to you in learning physiotherapy as a student with a visual impairment?	Student centred approach (Owen-Hutchinson, Atkinson & Orpwood 1996) Owen-Hutchinson & Atkinson (2010)

	Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy?	Check that all issues of importance to student have been discussed
	Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physio?	In order to address any emergent themes or to clarify issues raised in transcript

Appendix 5 Interview schedule Study 1

Interview schedule Study 1

Thank you for agreeing to participate in this interview.

- *semi-structured*
- *some questions on a script*
- *discuss points in response to any points raised about your own experiences*
- *relaxed and informal*
- *I hope that you will feel able to share your experiences of learning physiotherapy with me.*

In terms of learning as a student with a visual impairment, I have used the terms barriers and enablers. Essentially this means that I am mainly interested in what has helped or hindered your learning in physiotherapy so far, and the experiences that you have had as a student with a visual impairment.

I will be gaining consent for the participants to tape-record their interview. Are you happy for me to record yours so I can use it to improve my interview schedule or technique?

Contextual background

- What made you decide to study physiotherapy?
- Did anything influence your choice of course?
- How did you choose where to study?
- Did anything influence your choice of institution?
- Could you tell me a little bit about your visual impairment and your route through education before you started your physiotherapy course?

Learning experience in physiotherapy

- How have you found learning to be a physiotherapist so far?
- What are your experiences of learning physiotherapy so far?
    - What have been the most positive learning experiences so far?
    - Have there been any negative learning experiences in learning so far?

Prompts:

- What made it positive / negative?
- Why was that?
- How did you feel?
- How did you address that?
- Can you tell me a little more about how your learning was helped / hindered in that situation?
- Other people? Peers / educators?

Consider:

  - Lecture theatre / formal teaching space
  - small group / seminar
  - practical classes / physiotherapy skills
  - independent study
  - access to learning resources
  - assessment (written exams, practical exams, presentations)

- What are your experiences?
- How do you learn best?
- What helps you personally to learn?
- What strategies / enablers have you found useful?
- Have you faced any barriers?
- What are they?
- How have they affected your learning?
- How do you address them?

Further questions

How can universities / physio educators support students with VI best?

What are the most important things to you?

Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy?

If you could design a physiotherapy curriculum / course that would perfectly meet your own learning needs as a visually impaired

student, what would it include? What would be the best ways of learning physiotherapy for you?

Closure questions

Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physiotherapist?
How do you prefer your visual impairment to be described?

Final points

Thank you for taking part in this interview. I will send you a copy of the transcript for your review so that you can check it is an accurate record of what you have told me.

Please don't hesitate to get in touch if you want to add anything or clarify any points we have discussed today. I will now stop the interview and stop recording. Thank you.

Appendix 6 Participant Information Sheet Studies 1 & 2

University of Birmingham

Participant Information Sheet

Introduction

You are being invited to take part in a research study about the learning experiences of physiotherapy students who have a visual impairment. Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take time therefore to read the following information carefully. If there is anything that is not clear or if you would like more information about please do not hesitate to contact me; my details are at the end of this sheet.

What is the purpose of the study?

To investigate the learning experiences of physiotherapy students with a visual impairment in order to identify the possible barriers that these students face and the strategies that may be employed to enable better learning.

Why have I been approached?

You have been approached because you are an undergraduate physiotherapy student who has a disclosed visual impairment. In order to protect your identity, your Head of Programme has contacted you on my behalf, acting as an intermediary to protect you should you choose not to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. Your Head of Programme will not be informed whether or not you have chosen to participate. If you do decide to take part you will be given this information sheet to keep, and be asked to sign a consent form. You are free to withdraw from the study at any time and without giving a reason.

What are the possible risks or disadvantages to me taking part?

There are minimal risks or disadvantages to you taking part in this research. The interview will focus on your own experiences of learning to become a physiotherapist in the university setting. If these discussions upset you the interview will cease immediately and if necessary you will be advised to access support from your personal tutor or the disability co-ordinator in your institution.

Can I leave the study if I want to?

You will be able to withdraw from the study at any time without giving a reason and can choose not to answer particular questions if you are

concerned about their affect on you. There are no other risks to your taking part.

What do I have to do?

You will be asked to take part in semi-structured face to face interview in a location of your choice at a time to suit you. You will be asked about your own learning experiences at university and how (or whether) your visual impairment impacts on your physiotherapy education. No special knowledge or preparation is required.

Will my taking part in this study be kept confidential?

All information that is collected about you and your course during the course of the research will be kept strictly confidential. You and your institution will not be referred to by name in any written or published material. You will be given the opportunity to check any data collected about you which will be anonymised. All data collected will be stored securely on a password protected computer at the University of Birmingham and on a password protected memory stick. All data will be coded and pseudonyms will be used so that you cannot be identified from the research. All raw data will be destroyed once analysis and write up has been carried out.

What will happen to the results of the research study?

The results of this study will be presented as part of a Doctoral thesis for the award of Doctor of Education. The results will be published in the wider academic literature and may be presented as part of a conference proceeding.

Who has reviewed the study?

The School of Education Research Ethics Committee at the University of Birmingham. Outlines of the aims, research questions and methods planned in this study have been reviewed by a panel of University academic staff. All of the information sent to you or used within the interview has been subsequently reviewed by my supervisors to ensure that you are protected as a participant in this study.

Contact for further information

Helen Frank, Lecturer in Physiotherapy, University of Birmingham
[redacted]
[redacted]
Nursing & Physiotherapy
The University of Birmingham
52 Pritchatts Road
Edgbaston

Birmingham
B15 2TT

Dr Mike McLinden & Dr Graeme Douglas (Doctoral Supervisors), University of Birmingham

School of Education
The University of Birmingham
Pritchatts Road
Edgbaston
Birmingham
B15 2TT

Appendix 7 Participant Consent Form Studies 1 & 2

University of Birmingham

CONSENT FORM

Title of Project: Becoming a Physiotherapist – the learning experiences of student physiotherapists with visual impairments

Name of Researcher: Helen Frank
Please initial box

1. I confirm that I have read and understand the information sheet dated ----------for the above study and have had the opportunity to ask any questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw any time, without giving any reason. ☐

3. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent (if different from researcher)	Date	Signature
_____	_____	_____
Researcher	Date	Signature

(Copies of consent for: participant, researcher)

All information collected will be stored in accordance with the Data Protection Act 1998.

Appendix 8 Interview schedule Study 2 (Round 1)

Final interview schedule

Contextual background

- Could you tell me a little bit about your visual impairment?

- Could you tell me about your route through education before you started your physiotherapy course?
    - *type of school, support, learning support, equipment, peers, experiences*

- What made you decide to study physiotherapy?

- How did you choose where to study?

- Did you have any contact with the university before you started?

Learning experience in physiotherapy

- What year are you in?

- Can you tell me a bit about what you have been learning and how you have found it?

- Starting out – *first experiences, first modules, knowledge, skills, accessing support*

- Can you describe how you learn? Eg anatomy / assessment

- How do you access learning material in class? Before class?

    - Consider:
        - Lecture theatre / formal teaching space
        - Small group / seminar
        - Practical sessions / skills

        - Independent study

- Resources (books, internet, webCT or local network, handouts, worksheets, lecture notes)
- Assessment methods(written exams, practical exams, presentations)

Further questions

- What has helped you to learn physiotherapy most?

- What has hindered your learning physiotherapy at university most?

- Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy?

Closure questions

- Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physiotherapist?
- How do you prefer your visual impairment to be described?

Final points

- Thank you for taking part in this interview.
- I will send you a summary copy of the transcript for your review so that you can check it is an accurate record of what you have told me.

Appendix 9 Participant Information Sheet (Round 2)

University of Birmingham

Participant Information

Participant Information Sheet January 2013

Introduction

You are being invited to take part in a research study about the learning experiences of physiotherapy students who have a visual impairment. Before you decide if you wish to take part, it is important for you to understand why the research is being done and what it will involve. Please take time therefore to read the following information carefully. If there is anything that is not clear or if you would like more information about please do not hesitate to contact me; my details are at the end of this sheet.

What is the purpose of the study?

To investigate the learning experiences of physiotherapy students with a visual impairment in order to identify the possible barriers that these students face and the strategies that may be employed to enable better learning in Practice Based Learning.

Why have I been approached?

You have been approached because you are an undergraduate physiotherapy student who has a disclosed visual impairment. In order to protect your identity, your Head of Programme has contacted you on my behalf, acting as an intermediary to protect you should you choose not to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. Your Head of Programme will not be informed whether or not you have chosen to participate. If you do decide to take part you will be given this information sheet to keep, and be asked to sign a consent form. You are free to withdraw from the study at any time and without giving a reason.

What are the possible risks or disadvantages to me taking part?

There are minimal risks or disadvantages to you taking part in this research. The interview will focus on your own experiences of learning to become a physiotherapist in the university setting. If these discussions upset you the interview will cease immediately and if necessary you will be advised to access support from your personal tutor or the disability co-ordinator in your institution.

Can I leave the study if I want to?

You will be able to withdraw from the study at any time without giving a reason and can choose not to answer particular questions if you are concerned about their affect on you. There are no other risks to your taking part.

What do I have to do?

You will be asked to take part in semi-structured face to face interview in a location of your choice at a time to suit you. You will be asked about your own learning experiences on placement and how (or whether) your visual impairment impacts on your physiotherapy education. No special knowledge or preparation is required.

Will my taking part in this study be kept confidential?

All information that is collected about you and your course during the course of the research will be kept strictly confidential. You and your institution will not be referred to by name in any written or published material. You will be given the opportunity to check any data collected about you which will be anonymised. All data collected will be stored securely on a password protected computer at the University of Birmingham and on a password protected memory stick. All data will be coded and pseudonyms will be used so that you cannot be identified from the research. All raw data will be destroyed once analysis and write up has been carried out.

What will happen to the results of the research study?

The results of this study will be presented as part of a Doctoral thesis for the award of Doctor of Education. The results will be published in the wider academic literature and may be presented as part of a conference proceeding.

Who has reviewed the study?

The School of Education Research Ethics Committee at the University of Birmingham. Outlines of the aims, research questions and methods planned in this study have been reviewed by a panel of University academic staff. All of the information sent to you or used within the interview has been subsequently reviewed by my supervisors to ensure that you are protected as a participant in this study.

Contact for further information

Helen Frank, Lecturer in Physiotherapy, University of Birmingham
[redacted]
Nursing & Physiotherapy

The University of Birmingham
52 Pritchatts Road
Edgbaston
Birmingham
B15 2TT

Dr Mike McLinden & Dr Graeme Douglas (Doctoral Supervisors), University of Birmingham

School of Education
The University of Birmingham
Pritchatts Road
Edgbaston
Birmingham
B15 2TT

Appendix 10 Participant Consent Form (Round 2)

University of Birmingham

CONSENT FORM

Title of Project: Becoming a Physiotherapist – the learning experiences of student physiotherapists with visual impairments

Name of Researcher: Helen Frank
Please initial box

1. I confirm that I have read and understand the information sheet dated ----------for the above study and have had the opportunity to ask any questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw any time, without giving any reason. ☐

3. I agree to take part in the above study. ☐

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent (if different from researcher)	Date	Signature
_____	_____	_____
Researcher	Date	Signature

(Copies of consent for: participant, researcher)

All information collected will be stored in accordance with the Data Protection Act 1998.

Appendix 11 Draft contact email for course leaders

Draft contact email / letter

Dear

My name is Helen Frank and I am a lecturer in Physiotherapy at the University of Birmingham. As part of my Professional Doctorate in Education I am carrying out a study into the learning experiences of visually impaired physiotherapy students. In order to collect data from this small group of students, I need to firstly identify where they are studying. I am therefore writing to ask if you have any physiotherapy students on your undergraduate programme who have disclosed a visual impairment and who might be interested in participating in an interview about becoming a physiotherapist.

I have attached a participant information sheet that outlines the study and the involvement of your student should they agree to participate. Your institution will be anonymised and any data kept confidentially during data collection, analysis and write up. This study has been approved by the University of Birmingham School of Education Research Ethics Committee.

In order to maintain primary anonymity and confidentiality I would be grateful if you would act as a link between me and any potential participants in the first instance. Potential students must be undergraduate physiotherapy students, in any year of study and have a disclosed visual impairment.

Please would you be able to forward any appropriate students this email and the attached file that includes a study outline and participant information.

If you need any further information about my study or the involvement of your students please do not hesitate to contact me or my supervisors.

Helen Frank [redacted]
Dr Mike McLinden [redacted]
Dr Chris Corcoran [redacted]

In order to ensure that I have contacted each Head of Department, I will be following this email with a letter; please ignore it if you have already decided to respond!

Thank you reading this email. I look forward to hearing from your students.

Dear student

My name is Helen Frank and I am lecturer in Physiotherapy at the University of Birmingham. I am about to carry out a study into the learning experiences of physiotherapy students with visual impairments. I have approached your Head of Programme for permission to ask you if you would like to participate in an interview as you have disclosed a visual impairment. I have attached a formal participant information sheet that will tell you all about the project I am doing and about the important part you will play as a participant.

I have a long standing interest in physiotherapy education and am passionate about ensuring that education is accessible to all. As you are in such a tiny (but important!) minority I am keen to find out how you experience learning and how (or whether) your visual impairment impacts on your physiotherapy education. I hope that you will feel able to contribute to this important work; there has been no specific research into the learning experiences of visually impaired physiotherapy students although the Physiotherapy profession has long been accessible to blind and partially sighted people.

I do hope that you will offer to participate and tell me your experiences of becoming a physiotherapist. I would be grateful if you would reply to me whether or not you decide to take part in this research. Please contact me by email on [redacted] or by phone on [redacted]. I look forward to hearing from you!

Helen Frank
Lecturer in Physiotherapy

Appendix 12 Final participation invitation email Study 1

Dear

My name is Helen Frank and I am a lecturer in Physiotherapy at the University of Birmingham. As part of my Professional Doctorate in Education I am carrying out a study into the learning experiences of physiotherapy students with visual impairments. I am planning to conduct face-to-face or telephone tape-recorded interviews with individual students who are willing to participate. The interviews will take between half an hour and an hour and will be carried out in a location agreed with each participant. I am therefore writing to ask if you have any students registered on your undergraduate programme who have disclosed a visual impairment and who might be interested in participating in my research?

I have attached a participant information sheet that provides an outline of the study and the involvement of your student should they agree to participate. Names of your institution and your student will be anonymised and any data kept confidentially during data collection, analysis and write up. This study was reviewed and approved by the University of Birmingham School of Education Research Ethics Committee in April 2011.

In order to maintain primary anonymity and confidentiality I would be grateful if you would act as a link between me and any potential participants in the first instance. Potential participants must be undergraduate physiotherapy students in any year of study and have a disclosed visual impairment. Please would you forward this email and the attached file that includes a study outline and participant information sheet to any appropriate students. It will then be up to them to contact me to participate.

If you need any further information about my study or the involvement of your students please do not hesitate to contact me or my supervisors.

Helen Frank [redacted]

Dr Mike McLinden [redacted]

Dr Chris Corcoran [redacted]

In order to ensure that I have contacted each Head of Department, I will be following this email with a letter; please ignore it if you have already decided to help! Please pass this email onto anyone who may be more appropriate to help me such as a Welfare Tutor or Disability Co-coordinator.

Thank you reading this email. I look forward to hearing from your students.

Dear student

My name is Helen Frank and I am lecturer in Physiotherapy at the University of Birmingham. I am planning a study into the learning experiences of physiotherapy students who have visual impairments. I have approached your Head of Programme for permission to ask you if you would like to participate in my research as you have

disclosed a visual impairment. I have attached a participant information sheet that will tell you all about the project I am doing.

Although the Physiotherapy profession has long been accessible to blind and partially sighted people there has been no specific research into the learning experiences of visually impaired physiotherapy students. I have a long standing interest in physiotherapy education and am passionate about ensuring that education is accessible to all. As you are part of a small (but important!) minority I am keen to find out how you experience learning at university with a view to determining whether you have experienced any barriers to learning arising from your visual impairment, and the strategies that you have used to enable better learning in Physiotherapy. I do hope therefore that you will offer to participate in an interview to tell me about your experiences of learning to become a physiotherapist.

I would be very happy to answer any questions that you may have before agreeing to participate in this study. Please contact me by email on [redacted] or by phone on [redacted] I would be grateful if you would reply to me whether or not you decide to take part in this research.

I look forward to hearing from you.

Helen Frank

Lecturer in Physiotherapy

Appendix 13 Final participation invitation email Study 2

Dear

My name is Helen Frank and I am a lecturer in Physiotherapy at the University of Birmingham. As part of my Professional Doctorate in Education I am carrying out a study into the learning experiences of physiotherapy students with visual impairments. I am planning to conduct face-to-face recorded interviews with individual students who are willing to participate. The interviews will take between half an hour and an hour and will be carried out in a location agreed with each participant. I am therefore writing to ask if you have any students registered on your undergraduate or pre-registration programmes who have disclosed a visual impairment and who might be interested in participating in my research.

I have attached a participant information sheet that provides an outline of the study and the involvement of your student should they agree to participate. Names of your institution and your student will be anonymised and any data kept confidentially during data collection, analysis and write up.

This study was reviewed and approved by the University Of Birmingham School Of Education Research Ethics Committee in April 2011. In order to maintain primary anonymity and confidentiality I would be grateful if you would act as a link between me and any potential participants in the first instance. Potential participants must be undergraduate or pre-registration physiotherapy students in any year of study and have a disclosed visual impairment.

If you have a student who you think might be willing to participate, please would you forward the attached folder containing information about my study? It will then be up to them to contact me to participate.

If you need any further information about my study or the involvement of your students please do not hesitate to contact me or my supervisors.

Helen Frank [redacted]

Professor Mike McLinden [redacted]

Dr Graeme Douglas [redacted]

In order to ensure that I have contacted each Head of Department, I will be following this with a follow-up letter; please ignore it if you have already decided to help! Please pass this letter onto anyone who may be more appropriate to help such as a Welfare Tutor or Disability Co-coordinator.

Thank you reading this. I look forward to hearing from your students.

Helen Frank MSc PGCertHE MCSP HPC reg

Appendix 14 Interview schedule Study 2 (Round 2)

Follow-up Interview schedule (practice based learning)

Confirmation of content from previous transcript

Learning physiotherapy on placement

- Which placements have you completed so far?
- Starting out – prior preparation for placement? ?pre-visit, mobility, access
    - *Learning knowledge, skills, practices (professionalism)*
- Barriers and enablers – impact on learning? Can you explain how you learn in practice? Eg assessment / treatment

- Consider:
    - Medical notes, physio notes
    - Accessing patients on wards and in out-patients incl mobility
    - Xray, scans, reports
    - Observation on wards eg ward bedspaces, obs
    - Documenting assessments
    - Treating patients
    - Accessing electronic patient information
    - Independent study
    - Resources (books, internet, webCT or local network, handouts, department information)

Further questions

- What has helped you to learn on clinical most?
- What has hindered your learning on clinical most?
- Are there any other issues you would like to discuss or tell me about in relation to your own experience of learning physiotherapy in practice?

Closure questions

- Would you be happy to participate in any further interviews, either face to face or over the phone about your experiences of becoming a physiotherapist?

Final points

- Thank you for taking part in this interview.
- I will send you a summary copy of the transcript for your review so that you can check it is an accurate record of what you have told me.

Appendix 15 Email to course leaders Study 3

Email to course leaders

Dear

You may remember that a couple of years ago I invited you to act as a gatekeeper for my study into the learning experiences of visually impaired student physiotherapists. This study was ethically approved by the University of Birmingham.

By accessing the whole population of students via gatekeepers, I recruited 4 participants. I have now completed my data collection and analysis, and have begun publishing my findings. However, in order to complete my thesis I am keen to ask the course leaders again for their input, this time to comment on my findings. My findings showed that in order to ensure that students are supported, their lecturers and educators must be aware of the issues faced by visually impaired students.

In order to make your response quick and efficient, I have created a short questionnaire via Google Forms that should only take 5 minutes to complete. As it is an online survey it is anonymous and I cannot identify you or your institution from your responses. Any information I receive will be treated confidentially.

To access the questionnaire, please follow the link below:

xxxxxxx

If you are no longer the Course Leader or are unable to take part in this short questionnaire, please pass this email to the existing Course Leader or to a relevant member of your staff.

Many thanks for your participation in this final part of my Doctoral thesis.

Appendix 16 Draft online questionnaire Study 3

Course Leader Questionnaire

Thank you for taking the time to complete this short questionnaire. The aim of the questionnaire is to share my findings with you, and to ask for your opinions on the content and utility of my findings.

Your answers will be anonymised and recorded confidentially. I am unable to identify you or your institution from your responses.

(@Brief summary of findings as b & e)

1. From your experience of educating and supporting students with disabilities (which may include VI) do you recognise the **themes** from my findings? (@yes / no / somewhat) (expand)
2. Which of the **findings themes** surprised you most? (@list b & e) (expand)
3. Do you feel that the lecturing staff in your team are fully aware of the issues identified and faced by the participants in this study, outlined in the themes?
4. The importance of Academic staff was clear in my findings. Do you feel that your staff would be able to provide the **enablers** to learning for a student with VI? (@yes / no / somewhat) (expand)
5. Do the lecturing staff in your team have access to support to develop their teaching skills to support visually impaired students in the classroom?
6. Are there any **barriers** that would be difficult to overcome? (@yes / no / somewhat, identify and expand)
7. Do you feel that your institution would be able to support you to tackle the **barriers** faced by visually impaired students in learning?
8. These are my draft recommendations: (@add brief recommendations). What do you think are the **barriers** (if any) to implementing my recommendations?

Appendix 17 Pilot testing feedback Study 3

The following useful points were responded to in the final questionnaire;

Pilot respondent 1:

"Looks really good. My only comment would be it would be nice to be able to tick more than 1 box for a few things – but computer software might not allow it?"

Pilot respondent 2:

"What a lovely survey – looks great. I have completed and it sort of makes sense. I have two questions though – sorry but what did you expect!

1. Do you want to know who is completing this and if they have ever educated visually impaired physiotherapy students? Or even if there has been any visually impaired students on the course during their employment?

2. Could you shorten the length of the questions – especially the first one (which doesn't mean a lot if you haven't been immersed tin the research for some time) – by writing a brief summary of the findings at the beginning

> *i.e. My doctoral research study identified barriers and enablers to learning, experienced by physiotherapy students with visual impairments.*
>
> *3 major barriers were;…..*
>
> *Question one Do you recognise these themes?*
>
> *Question two Looking at the barriers to what extent ….*

What I found was that I had to really think about what you were asking for each question – this may be deliberate on your part but the first questions were difficult to get my head round."

Appendix 18 Final questionnaire Study 3 (word version)

Ensuring access to the curriculum for visually impaired students in physiotherapy education

Thank you for taking the time to complete this short questionnaire. This is the final part of my research into the learning experiences of visually impaired physiotherapy students. The aim of the questionnaire is to share my findings with you, and to ask for your opinions on their content and utility in relation to teaching and learning in the university setting. The questionnaire is fast to complete and should only take 5 minutes.

Your answers will be anonymous and recorded confidentially. I am unable to identify you or your institution from your responses.

Thank you again for completing this questionnaire

Helen Frank

Course Leader (BSc Physiotherapy) University of Worcester

Doctoral Student (University of Birmingham)

1. Have you had any experience of teaching visually impaired physiotherapy students in university? YES / NO

   If you answered yes, please provide some information about your experience. For example how many students, in what context and over what period of time?

2. Unsupportive (staff) behaviours were identified as a BARRIER to learning. Does this surprise you?

   Would you like to expand your answer?

3. Environmental Barriers (eg. lighting and room size and space), reliance on visual methods to teach (eg. powerpoint, whiteboard and demonstrations) and visual resources (eg. handouts, pictures, books) were reported as barriers to participation in learning.

   To what extent do you think these barriers can be overcome in university based physiotherapy education?

   With ease (1)

   With great difficulty (5)

4. All participants reported that they needed to put in extra time and effort into their studies as a result of their visual impairment. This included time and effort to access,

secure and maintain support, time and effort to access books and written resources, and time and effort to use new equipment or software for example screen-readers or databases.

To what extent do you think that needing extra time and effort would affect a students' ability to access the curriculum and succeed in their studies on your course?

Needing extra time and effort would significantly affect a student's ability to succeed in their studies (1)

Needing extra time and effort would not affect a student's ability to succeed in their studies (5)

5. In your opinion, which of the barriers identified would be the most difficult to overcome on your course?

   Unsupportive (staff) behaviours
   Environmental barriers (teaching space)
   Reliance on visual methods to teach
   Visual resources
   Time and effort
   None of them, they can all be tackled

6. Do you feel that the lecturing staff in your team are aware of the potential barriers to learning for visually impaired students?

   No, they are completely unaware (1)
   Yes, they are fully aware (5)

7. Supportive staff behaviours such as being accessible, approachable and proactive were identified as an enabling factor for learning.

   Do you foresee any challenges in providing support for visually impaired students on your course?

   Yes
   To some degree
   No

   If you answered Yes, or to some degree, could you expand on your answer?

8. Individual attributes such as being open and honest about their visual impairment, organised, proactive and being self-aware all enabled learning physiotherapy. Does this surprise you?

Yes
No

Would you like to expand on your answer?

9. The development of strategies and adaptations to facilitate learning was identified as a clear enabling factor. This was affected by staff behaviours and individual attributes.

   What do you consider to be the main challenges for lecturing staff in developing and providing strategies and adaptations for visually impaired students?

10. What support is available in your institution to ensure inclusive teaching and learning for visually impaired students?

    Support from other academic staff
    Support from the Disability Support Unit (or other)
    Support from within the Institution
    Support from other academic peers within the university
    Support from outside of the university
    There is little or no formal support
    Other

    Would you like to expand on your answer?

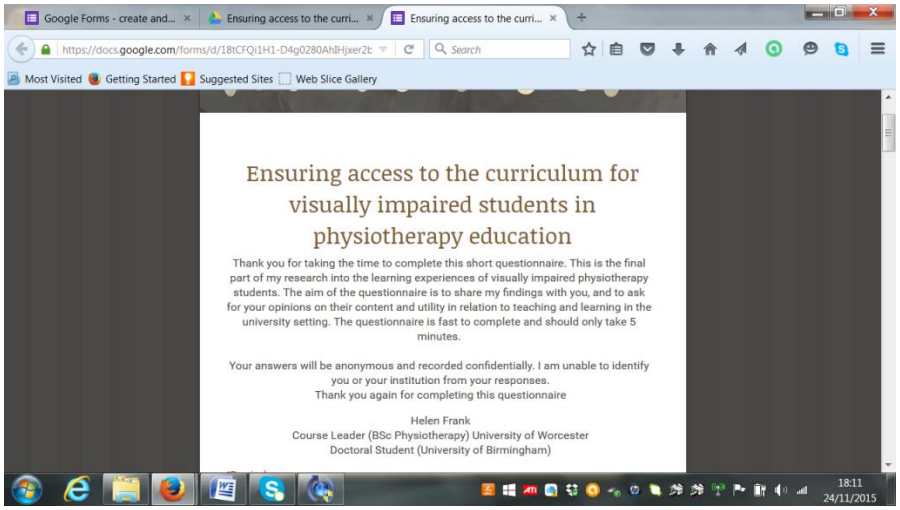
11. Is ADDITIONAL support to deliver inclusive teaching and learning for visually impaired students necessary?

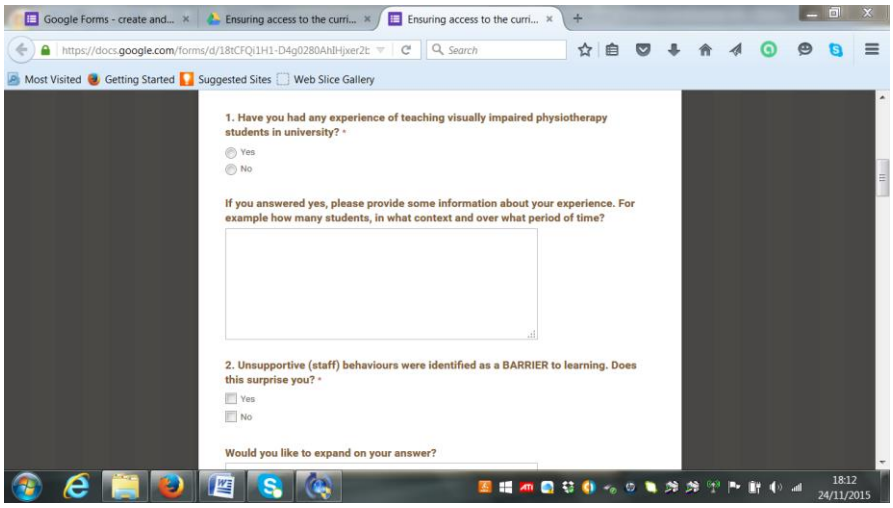
    Yes
    Yes, possibly, depending on the student's needs
    No

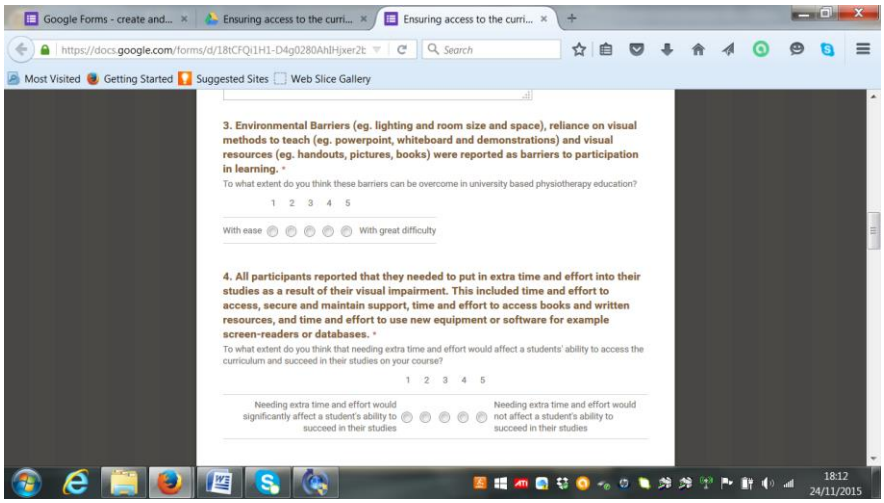
    If you answered "Yes", or "Yes, possibly", what sort of support might be needed?

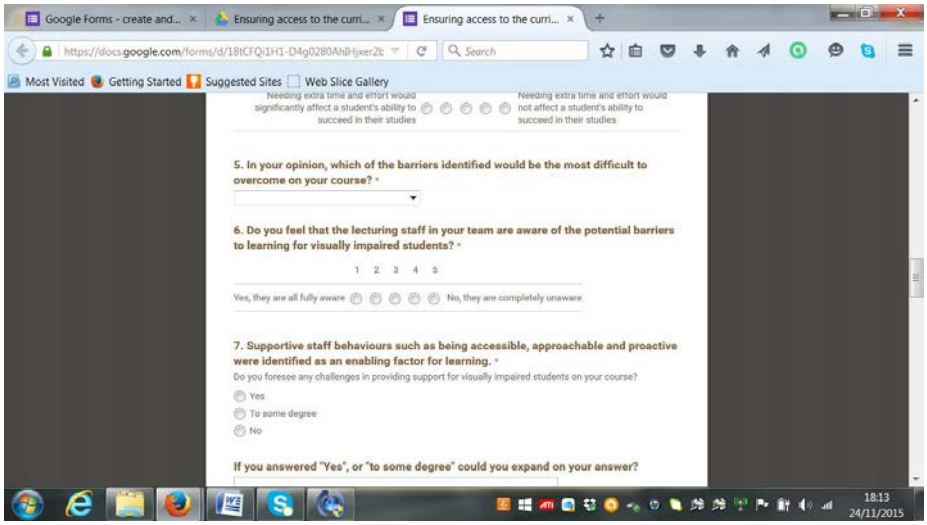
12. Finally, is there anything else that you would like to add or comment on?
    Your response has been recorded. Thank you very much for taking the time to complete this questionnaire.

Appendix 19 Final online questionnaire Study 3 (Google forms)





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Needing extra time and effort would significantly affect a student's ability to succeed in their studies
Needing extra time and effort would not affect a student's ability to succeed in their studies
5. In your opinion, which of the barriers identified would be the most difficult to overcome on your course? *
6. Do you feel that the lecturing staff in your team are aware of the potential barriers to learning for visually impaired students? *
1 2 3 4 5
Yes, they are all fully aware
No, they are completely unaware
7. Supportive staff behaviours such as being accessible, approachable and proactive were identified as an enabling factor for learning. *
Do you foresee any challenges in providing support for visually impaired students on your course?
Yes
To some degree
No
If you answered "Yes", or "to some degree" could you expand on your answer?
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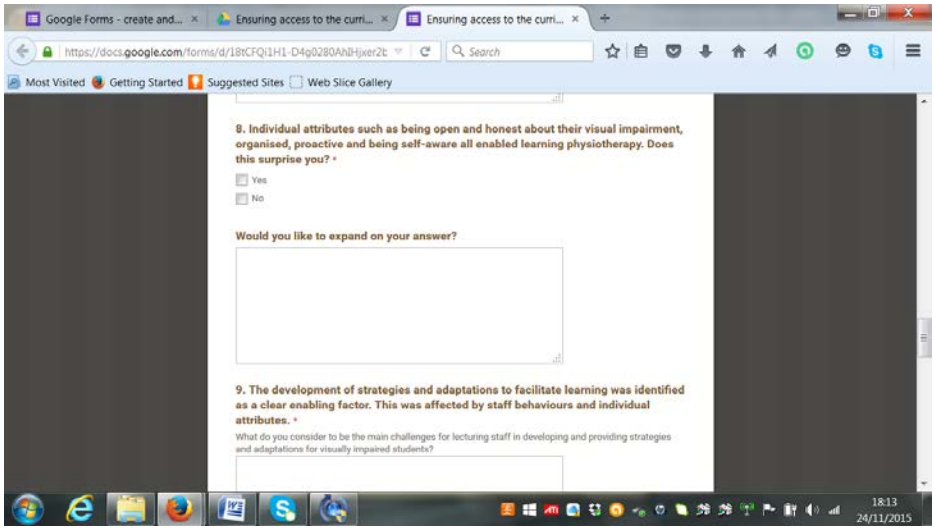
24/11/2015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8. Individual attributes such as being open and honest about their visual impairment, organised, proactive and being self-aware all enabled learning physiotherapy. Does this surprise you? *
Yes
No
Would you like to expand on your answer?
9. The development of strategies and adaptations to facilitate learning was identified as a clear enabling factor. This was affected by staff behaviours and individual attributes. *
What do you consider to be the main challenges for lecturing staff in developing and providing strategies and adaptations for visually impaired students?
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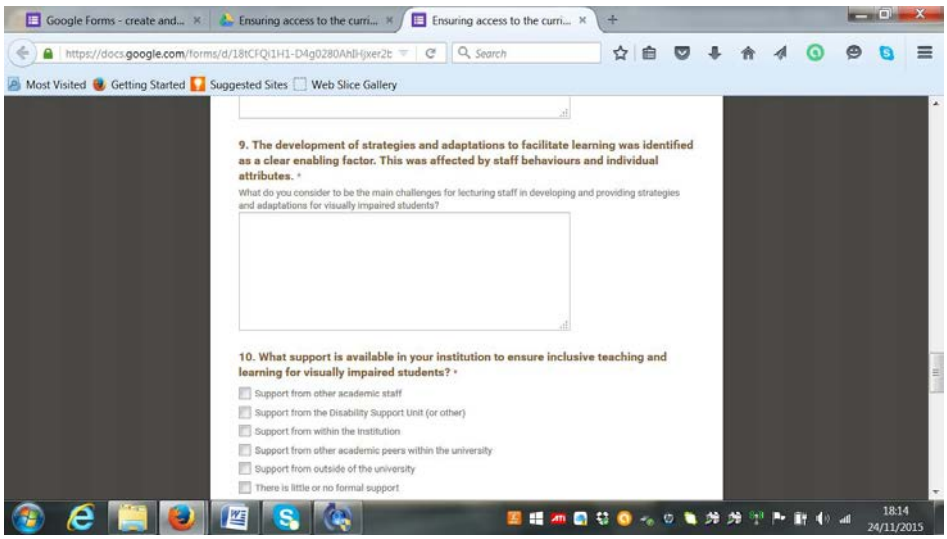
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9. The development of strategies and adaptations to facilitate learning was identified as a clear enabling factor. This was affected by staff behaviours and individual attributes. *
What do you consider to be the main challenges for lecturing staff in developing and providing strategies and adaptations for visually impaired students?
10. What support is available in your institution to ensure inclusive teaching and learning for visually impaired students? *
Support from other academic staff
Support from the Disability Support Unit (or other)
Support from within the Institution
Support from other academic peers within the university
Support from outside of the university
There is little or no formal support
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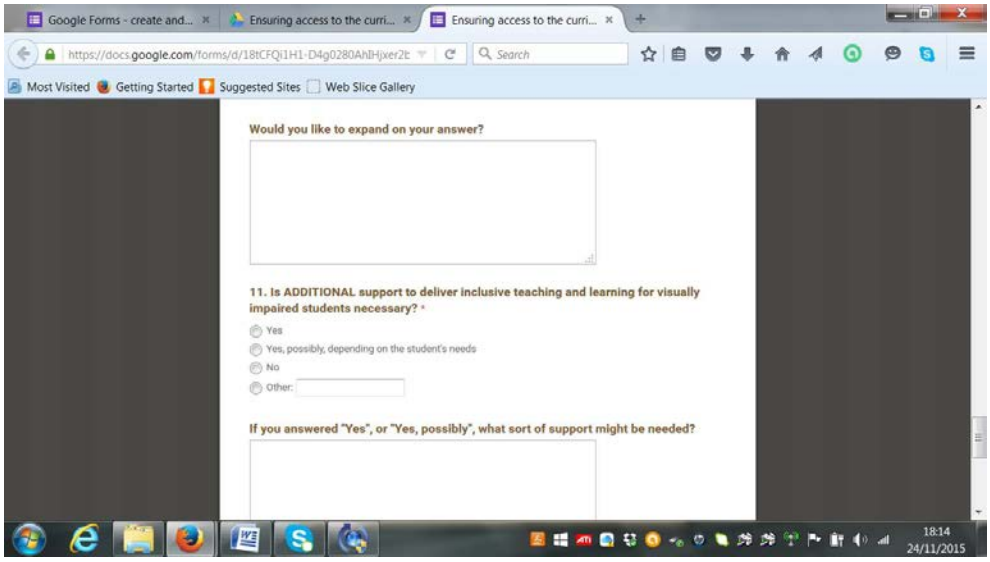
24/11/2015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Would you like to expand on your answer?
11. Is ADDITIONAL support to deliver inclusive teaching and learning for visually impaired students necessary? *
Yes
Yes, possibly, depending on the student's needs
No
Other:
If you answered "Yes", or "Yes, possibly", what sort of support might be needed?
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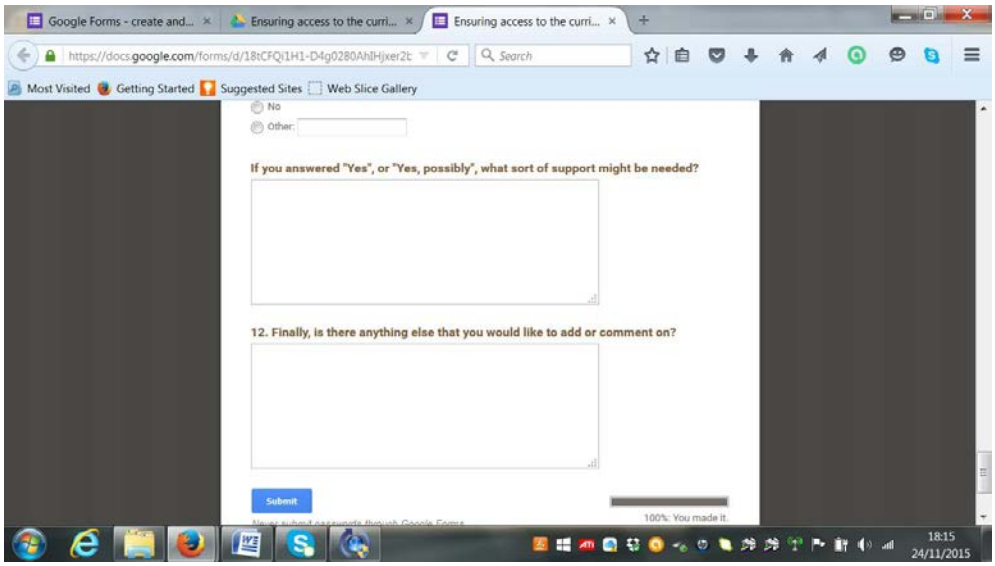
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No
Other:
If you answered "Yes", or "Yes, possibly", what sort of support might be needed?
12. Finally, is there anything else that you would like to add or comment on?
Submit
100%. You made it.
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